



amateur radio

Vol. 35, No. 6
JUNE
1967

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FEDERAL COMMENT

★

Listening round the bands these days, one is impressed with the
increasing number of interfering signals. Some are speech in foreign
languages and some are strange noises that might be teletype, pictures,
or anything else. If they go on increasing there will soon be no space
for legitimate Amateur traffic.

Listening round the bands, one is also impressed with the attitude of
despair displayed by the average Amateur on this subject. When faced
with interference he merely moves to a clear spot—if there is one—and
makes no attempt to do anything else. This is natural because he does
not know what he can do that will be effective.

Listening round the bands, one hears quite a number of Amateurs
who obviously have nothing else to do. They may be disabled, ill, or
merely retired. But they all represent a great potential in the battle
for the frequencies.

Overseas "Intruder Watches" are organised, expressly to identify
these intruding signals. When identification has been ascertained, a
report is made to ARRL, R.S.G.B. or other authorities, and real success
has been achieved in having these intruders removed from the bands.
Australia has no such organisation; but it soon will have! By the end
of this year it will be active and will need identifications.

When the Institute calls on the service of Amateurs to man its
"Intruder Watch" you will have the correct form to use. Your assistance
will be the means by which the Australian Amateur Service will play
its part in keeping the Amateur assignments for the Amateurs. If you
want to be in it, let us know NOW!

—GEORGE PITHER, VK3YK, Federal Liaison Officer.

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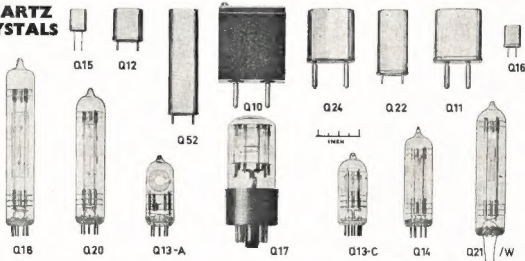
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THE VK3ABP SIX-METRE CONVERTER

W. M. RICE,* VK3ABP

THE acceptance by Amateurs all over Australia of the writer's two-metre converter ("Amateur Radio," Nov., 1962) has been most gratifying, and certainly most unexpected. Judging by the letters received, and discussions on the air and in person, it appears that several hundred of these devices are now in service, and in most cases their users are quite satisfied. Possibly one reason for the popularity of the two-metre model was its mechanical simplicity, which enabled practically anyone to build it with a minimum of tools and only a few hours' work.

The commonest query received by the author on the subject (apart from those regarding the few "bugs" sometimes met with the two-metre converter) has been, "When are you going to bring out a six-metre model?" So eventually, to overcome the poor sensitivity and stability of the old home-brew tuneable front-end receiver on six, a six-metre converter was built, even simpler than the two-metre model, and designed specifically to minimise the Channel 0 i.t.v. problems of which Melbourne Amateurs often complain.

It might well be asked in 1967, much more than in 1962, why should we not be "with" the current trend and use transistors? There are good reasons

Most of Melbourne is closer to the v.t. stations than this QTH, and even using valves many of the Melbourne operators on six have cross-modulation troubles. Fortunately, by use of a few simple techniques it is possible to improve on the usual converter circuits very substantially. The important thing is to give the valves the best possible chance, by choice of circuit and operating conditions, to maintain linear operation in the presence of the strong unwanted signal, thereby minimising the extent to which its modulation can be transferred to the weaker, wanted, signal.

several less components, and in the case of the remote cut-off or variable- μ type, is probably the best solution. This implies such types as the 6BY7 or 6BZ6, rather than the sharp cut-off 6BX6 and 6CB6, while the higher gain 6EH7 will probably be worse, and its sharp cut-off version (6EJ7) should not be considered at all.

(3) Do not use high-resistance grid circuits. The r.f. grid must be connected directly to the tuned circuit, the other side of the latter being earthed. This applies even more strongly to the mixer, which should be cathode-biased. The aim here is to

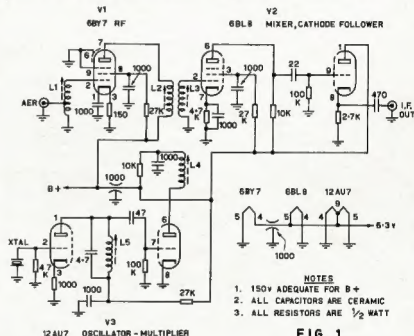


FIG. 1

ANTI-CROSS-MODULATION TECHNIQUES

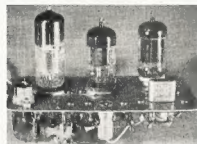
The following four measures are recommended to minimise cross-modulation, and their implications discussed:—

(1) Do not build in more r.f. gain than is necessary to make mixer noise negligible. Once this aim has been achieved, the proper place to provide gain is in the i.f. system, where the selectivity of the preceding tuned circuits progressively attenuates the unwanted signal.

(2) Use for the r.f. stage a valve and circuit capable of handling large signal voltages without overloading. The cascode circuit is good in this respect, but on six metres, where external noise is often the limiting factor there is no real need for the low-noise cascode. A pentode amplifier requires

prevent the strong unwanted signal from producing grid-current bias, which will of course aggravate any tendency towards cross-modulation. Incidentally, this advice was not followed in the two-metre converter, but cross-modulation is not usually a problem on that band (except in the Sydney-Wollongong Channel 5A area!).

(4) Do not use capacitive coupling between r.f. and mixer stages. This more or less follows from the previous recommendation, since if a tuned circuit must be used in the grid, it is appropriate to use one in the plate also and inductively couple them. A pair of tuned circuits, at around critical coupling, will give a steeper-skirted response than a single circuit can provide, and therefore discriminate more against strong out-of-band signals.



though for using valves in this particular application, and the presence of a good stock of valves and not too many transistors in the VK3ABP shack was only a minor consideration. The main factor to be considered at this location, even though it is 30 miles from the t.v. transmitters, is that a six-metre beam aimed at ZL will feed at least 20 millivolts of r.f. on 51.75 Mcs. into the converter r.f. stage, and correspondingly more into the mixer. From previous experience with transistors it was known that cross-modulation tends to appear at over about 50 millivolts. In defence of solid state devices it must be admitted that field-effect transistors should be at least as good as valves, but f.e.t.'s are not yet cheap, particularly types having good v.h.f. noise figures.

*54 Maidstone Street, Altona, Vic.

CHOICE OF INTERMEDIATE FREQUENCY

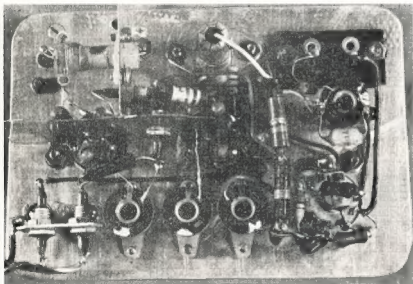
The next point to consider is what intermediate frequency should be used (i.e. what band on the associated receiver should be used as the tuneable i.f.). In practice, for any band, this involves selection of a suitable tuning range so as not to necessitate band-switching to cover the Amateur band concerned, bearing in mind that the receiver frequency stability will be best near the low end of its range, but that converter image and spurious responses will be less troublesome the higher the chosen i.f. Quite likely, the final choice may be determined by what crystals are available!

However, in the six-metre case, there are two other factors which must be taken into account. Firstly, the oscillator frequency should not fall in Channel 0 (45 to 52 Mcs.), unless the nearest t.v. set is several hundred feet away. It is quite surprising how much t.v.i. a few milliwatts of r.f. in the channel can produce! This means that for forward tuning (increasing i.f. means increasing signal frequency, i.e. oscillator below signal), the i.f. cannot be lower than 7 Mcs.

at all. The results of analysis along these lines are summarised in Table 1, which shows what crystal frequencies are necessary in all cases.

I.f. for 28-54 Mcs.	Crystal frequencies using		T.v. channels T.v.i. to from	
	3rd X2	over-tone X3	GRM	
2-4	8333	5555	0	0
3-5	8167	5444	0	0
4-6	8000	5333	0	—
5-7	7833	5222	0	—
6-8	7667	5111	0	—
7-9	7500	5000	0?	—
8-10	7333	4889	—	—
9-11	7167	4778	—	—
10-12	7000	4667	—	—
11-13	6833	4555	—	—
12-14	6667	4444	—	—
4-2	9333	6222	1?	1
5-3	9500	6333	1	1
6-4	9667	6444	1	1
7-5	9833	6555	1	2
8-6	10000	6667	1	2
9-7	10167	6778	1	2
10-8	10333	6889	1?	—
11-9	10500	7000	2	—

Table 1.—Crystal frequencies needed for various i.f. tuning ranges.



Secondly, even if the risk of t.v.i. is accepted, a forward-tuning i.f. below 3.5 Mcs. will cause the image of the Channel 0 signals to appear in the Amateur band. It is this fact which has caused many Amateurs to blame Channel 0 for producing "spots" on the six-metre band when in fact the fault is in their choice of converter i.f.!

We may conclude, therefore, that if it is necessary to use a low i.f. for reasons involving the i.f. receiver calibrations or bandswitching, then this can only be achieved by accepting reverse tuning and using an oscillator frequency above 54 Mcs. This only applies of course to areas served by a Channel 0 t.v. station. By similar reasoning, where the local station is on Channel 1 (56 to 63 Mcs.), it is found that reverse tuning should not be used

CONSTRUCTION OF THE CONVERTER

The foregoing discussion should serve to explain most of the features of the converter circuit (Fig. 1) as regards the r.f. and mixer stages. As in the two-metre model a cathode follower is used for i.f. output; there are some differences in the oscillator-multiplier circuit however. Since the multiplier is only required to double or triple (depending on the choice of crystal) there is no need to use a high-gain stage here, and a 12AU7 was found to be quite adequate. The crystal used was a highly active miniature type (unlike the FT243 in the two-metre converter) and no extra feedback was necessary to obtain third-overtone operation, so the capacitive ("Robert Dollar") or tickler-

feedback circuit was not required. In fact it was found with this particular crystal that fundamental oscillation persisted until the 12AU7 was "throttled back" by use of an unbypassed cathode resistor.

It must be explained that fundamental oscillation will not stop the converter working, but is highly undesirable if the i.f. tuning range includes the crystal frequency. Also the presence of more crystal harmonics than necessary will increase the risk of spurious responses.

The layout of the converter is similar to the two-metre version, with the mixer socket in the centre of the chassis plate (3½ in. x 5 in.), the r.f. stage on the centre line near one end, and the oscillator towards one corner. The underneath view (Fig. 2) should make all this clear.

All the coils are wound on small slug-tuned formers of 5/16 in. diameter, which as obtained from a disposals store already had windings on them of 25 or 26 turns in ½ in. length. It was necessary only to strip off turns as required for each tuned circuit. Full details are given in Table 2. The r.f. plate, mixer grid, and multiplier plate coils are inductively coupled by mounting them side by side with their axes parallel at a centre-to-centre spacing of ½ in.

Coil	Function	Winding data
L1	Aer.-r.f. grid	9 turns tapped at 1
L2	r.f. plate	12 turns
L3	Mixer grid	9 turns
L4	Multiplier grid	12 turns
L5	Oscillator	25 turns

Table 2.—Coil data.

All coils wound on slug-tuned plastic formers 5/16 in. diameter, 28 t.p.s. a.s.c. close wound (approx. 50 turns per inch).

Shielding is provided exactly as in the two-metre unit, i.e. a tinplate partition 1½ in. deep which bisects the r.f. socket and finishes at the centre spigot of the mixer socket. Another shield at right angles to the first serves to "wall off" the aerial circuit from the rest of the chassis. It is convenient to mount the aerial coil on this second shield so that its axis is at right angles to the other coils, thereby minimising stray inductive feedback. Socket orientation is such that pin 5 of the r.f. socket is nearest the mixer and earthed to the shield, while pin 4 of the mixer socket faces towards the r.f. stage and is likewise earthed. Heater supply to the r.f. stage is brought in to pin 4 via a feed-through capacitor between the aerial coil and chassis. The r.f. plate supply is bypassed by a feed-through capacitor through the shield near the mixer socket. Plate supply for the mixer and oscillator is taken from the other side of this feed-through. The rest of the layout is virtually identical to the two-metre converter, and is in any case not critical.

ALIGNMENT AND PERFORMANCE

The only part of the alignment process which may give any trouble, and it should be tackled first, is to obtain proper overtone operation of the oscillator. Depending on the type and activity of the crystal used it may be necessary to delete the oscillator

(Continued on Page 15)

A TRANSISTORISED TWO METRE CONVERTER

H. L. HEPBURN,* VK3AFQ, and K. C. NISBET,† VK3AKK

THE converter to be described in this article is the first in a series of articles on converters intended for use with the Moorabbin and District Radio Club transistorised 80 metre receiver.

Initially work was commenced on the basis that it would be possible to produce a simple converter using, say, four transistors. Such a converter was in fact produced using an AF186 r.f., an AF114N mixer, and two AF114Ns in

The crystal oscillator chain consists of an oscillator and a multiplier. The fifth harmonic of the crystal is first mixed with the incoming signal after it has been amplified in Q1 and Q2. This brings the first i.f. down to around 27 Mc. This is then mixed with the fundamental of the crystal to give the required output frequency.

In Fig. 1 an incoming signal of 144 Mc. and an output frequency of 3.5 Mc. have been instanced.

required to match the base of Q1, the SE5020 first r.f. amplifier. A common emitter configuration has been used here and provision has been made for application of external a.g.c. if required. The 5K potentiometer across the supply rails acts as an r.f. gain control.

Output from Q1 passes through a second band pass coupler (L3/L4) and C8/C9 reduce the impedance of the tuned circuit to a suitable value for feeding the base of Q2, the AF186 second r.f. amplifier.

A third band pass coupled pair (L5/L6) and capacitive divider (C13/C14) feed Q3, the AF114N first mixer. Output from Q6, the AF114N multiplier, at about 117 Mc., is fed to the emitter of the first mixer.

A single slug-tuned circuit (L7/C17/C18) on about 27 Mc. is used in the collector circuit of the first mixer.

This 27 Mc. signal is fed to the base of Q4, the second AF114N mixer, which also receives injection voltage at the crystal frequency in the emitter circuit.

The resultant output on about 3.5 Mc. is taken from Q4 collector through a fixed pi-coupler (L8, C19, C20).

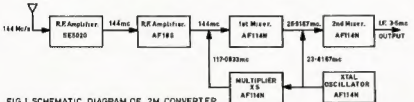


FIG. 1. SCHEMATIC DIAGRAM OF 2M. CONVERTER.

the injection oscillator chain. While this prototype did indeed work, the overall gain of the converter/receiver combination was low and most of the "signals" received were either images of various sorts or "birdies" from the various oscillators. In spite of the fact that some overseas journals had featured articles on simple 2 metre converters of the type originally envisaged, the results obtained were not truly satisfactory. Accordingly a new design was evolved to overcome the problems encountered and Fig. 1 gives a schematic representation.

For other i.f. output frequencies the crystal frequency can be calculated from the expression:

$$\text{Signal Freq.} - \text{Output Freq.} = \frac{f}{n}$$

Adoption of a double conversion process effectively eliminated images and break-through.

Fig. 2 is the detailed circuit diagram of the converter.

Signals from the antenna at the 50/75 ohm impedance level are fed to a tap on L1 which is tuned by C2 to the signal frequency. L1/L2 form a band pass coupler and L2 is tuned by the C4/C5 combination which also transforms the impedance to the low level

COILS

All coils are wound on Neosid Type 722/1 bakelite formers fitted with F29 iron slug cores. The formers associated with the mutually coupled pairs L1/L2, L3/L4, L5/L6 and L10/L11, are mounted on Neosid 8-lug base plates. Type 5200/PLD, while the remaining coils (L7, L8 and L9) are mounted on Neosid Type 5027/PLD four-lug bases.

L1, 2, 3, 4, 5, 6, 10 and 11 all consist of 4 1/2 turns of 22 gauge wire spaced

(Continued on Page 11)

* 4 Elizabeth St., East Brighton, Vic.
† 25 Thames Ave., Springvale, Vic.

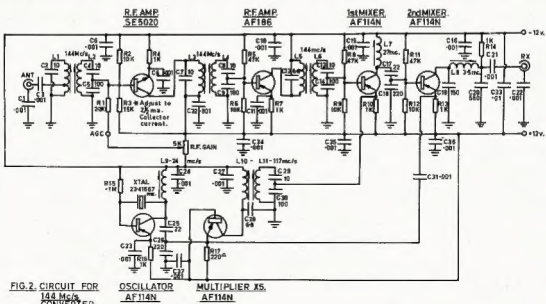
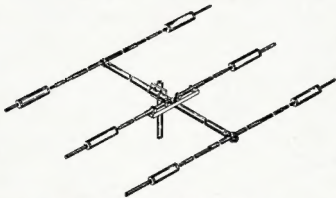


FIG. 2. CIRCUIT FOR 144 Mc/s CONVERTER.

TA-33Jr by Mosley



SPECIFICATIONS AND PERFORMANCE DATA

Forward Gain, up to 8 db.	Wind Surface, 4.3 square feet.
Back-to-Front Ratio, 25 db.	Assembled Weight, 20 lbs.
Max. Element Length, 26 ft. 8 in.	Shipping Weight (Air), 30 lbs.
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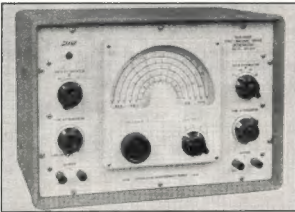
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JAG/10/24/NA

Amateur Radio, June, 1967

LONG QUADS FOR 144, 432, 1296 Mc.

I. F. BERWICK,* VK3ALZ

THERE are a number of reasons why the quad yagi is superior in performance to the linear yagi—particularly at the higher frequencies. The writer has been able to demonstrate that the long quad yagi has the following advantages over the long linear yagi:—

- (1) Cleaner, sharper field pattern.
- (2) Less critical matching.
- (3) Better gain-bandwidth characteristic.
- (4) Less affected by adjacent conductors (beams on the same support, etc.).
- (5) Less critical in adjustment.

The dimensions of the 144 Mc. quad are given below. These dimensions should be divided by 3 for 432, and by 9 for 1296.

Element material is $\frac{1}{8}$ " aluminium wire.

The booms for 144 and 432 Mc. are $\frac{1}{2}$ " dural tube; for 1296 Mc., $1\frac{1}{2}$ " wood dowel. The elements are supported on top of the boom by clamps.

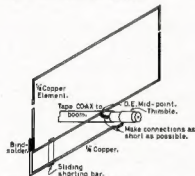


FIG. 1. General arrangement of Gamma-Match.

DIMENSIONS OF 144 Mc. QUAD YAGI

Element	Length inches	Spacing inches
Reflector	87	18½
DE	83	
D1	79	7
D2	79	7½
D3	79	7½
D4	79	16
D5	79	32
D6	30	30
D7	30	30
D8	30	30
D9	30	30
D10	30	30
etc.	etc.	etc.

Two eight-director models have been built for 144 Mc.—one for tropospheric work—the other on an el.-az. mount for Oscar tracking.

Two 24-director models have been built for 432 Mc. The first has circular elements—used for tropospheric—the second, with square elements, is fitted to the tracking mount. A 10-director model is used on 1296 Mc.

The pattern in both planes was fully explored using the signal from Oscar IV.

An important component in the success of these antennae is the gamma matching system herein described. It is strongly recommended in preference to other systems.

GAMMA MATCH

Fig. 1 shows the general arrangement of the gamma match, while Fig. 2 shows the co-ax. termination at the gamma section.

The gamma capacitor consists of the capacity which exists between inner conductor and the brass thimble through the polythene dielectric—it can be varied by pruning the thimble.

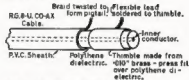


FIG. 2. Termination at Gamma-Match section.

A monimatch reflectometer is used for s.w.r. measurements to 1296 Mc. and is satisfactory for the matching process.

The brass thimble is approximately: 3" long at 144 Mc.

1½" " 432 "

1" " 1296 "

It is not particularly critical at the lower frequencies.

The gamma rod spacing is:—

1½" at 144 Mc.

1" " 432 "

¾" " 1296 "

A field strength meter should be used in conjunction with the reflectometer during matching—maximum field strength should coincide with minimum s.w.r., if not either your final is incorrectly loaded or reflectometer is inaccurate.

ELEMENT CLAMP

The element clamp is shown in Fig. 3. When the mounting screws are tightened up the clamp should clamp the element tightly.

ARRANGEMENT OF THE ANTENNA

Fig. 4 is the general arrangement of the 144 Mc. antenna, and Fig. 5 shows

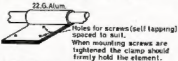


FIG. 3. Element clamp.

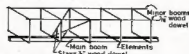


FIG. 4. Antenna & Boom arrangement.

the circular elements for the 432 Mc. model. For 1296 Mc. no minor boom is needed.

MAKING THE ELEMENTS

The driven elements should be of copper or silver-plated brass; the parasitics may be any of the usual materials. If aluminium wire is used, the ends must be joined by the brazing process described in an earlier issue of this magazine.

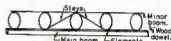


FIG. 5. Circular element 432 Mc. antenna. (No minor boom for 1296 Mc. is needed.)

FURTHER NOTES

An improvement in front to back ratio can be obtained if so desired by increasing reflector length by about 1%. A reduction in minor lobes and increase in bandwidth can be achieved by tapering directors by up to 1%.

The antenna is horizontally polarised with the gamma section horizontal.

The only limits to increasing performance (with increasing size) with this antenna are the mechanical ones—backlash in rotating system, sway of the supporting structure, etc.

★

Correspondence

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the Publishers.

BEHAVIOUR OF A ZENER DIODE

Editor "A.R." Dear Sir,
In reference to R. L. Gunther's Technical Correspondence in the April issue of "A.R." where mention was made of a zener diode "transmitter," I would like to add a few observations of my own.

Disregarding the rather doubtful origin of the article referred to, an analysis of the behaviour of a zener diode in this circuit suggests that it cannot possibly amplify. In order to achieve amplification, a two terminal device such as a tunnel diode must exhibit negative resistance under its operating range. As far as I am aware, although I have not seen the characteristics of the diode referred to, a zener diode acts as a positive resistance, generally very small dynamically.

Examining the behaviour of a zener diode in a series configuration reveals the possibility of producing class C type current waveforms but unfortunately no power gain is possible. By considering a.c. components, the load current is identical to the input current, while the output voltage is less than the input by the a.e. potential drop across the diode. A similar analogy can be applied to the parallel case and in both instances the power gain is less than unity. Even if zener diodes did exhibit negative resistance, which would impair their regulation abilities, they would be very inefficient since the zener offset voltage contributes nothing to the output and only serves to increase diode dissipation.

I would be interested to hear from anyone who can prove that the transmitter would work or has evidence of one operating successfully, excepting of course "Dr. Gitchgoney's" device.

—D. O. Clarke, VK5ZKY.

(Did you check publication dates?—Ed.)

* 167 Longgona Ave., Glenroy, Vic.

TWO-METRE TRANSISTORISED CONVERTER

A 144 Mc. Transistor Converter is described, with a noise figure of about 5 db. This is of the same order as a vacuum tube converter using an E88CC in the r.f. stage.

Both the mixer and r.f. stages use AFZ12 transistors. Ground base operation of the r.f. stage avoids the need for neutralisation, while the mixer stage is connected in common emitter with emitter injection of the local oscillator.

The oscillator chain uses two NPN transistors, the first is an oscillator on 35.00 Mc. and the second quadruples to 140 Mc. This gives an output of 4 Mc. to the receiver. Note that no external feedback is required with the crystal oscillator stage using an overtone crystal.

For best noise figure, the antenna tap on L1 should be adjusted with the aid of a noise generator. Since the required source impedance of the AFZ12 is about 30 ohms for best noise figure, the antenna tap need only be slightly higher on the coil than the emitter tap. The 3 db. bandwidths of the output tuned circuit (L3 and C) is about 1 Mc., but quite satisfactory performance

is obtained up to 148 Mc., the drop in gain not being serious.

The types of transistors used in the circuit are not critical and better types may be available than those given. Minor changes in the d.c. parts of the circuit will, however, be necessary if a transistor of opposite polarity is used.

LAYOUT

A copy of the layout used is reproduced here and should help in duplicating the construction of the converter. The "chassis" used was a piece of 18 gauge brass, about 5½ x 3 inches. This size could, however, be considerably reduced, and simply by reducing distances between all components, the original layout could be used on a much smaller chassis.

COIL DATA

- L1—6 turns, 0.3 in. diam., 0.5 in. long, 18 B. & S. Emitter tap: 1½ turns from ground. Antenna tap: Approx. 1½ turns from ground.
- L2—As L1, but base tap 1½ turns from "cold end".
- L3—70 turns, 32 B. & S., 0.3 in. diam. former with slug.
- L4—12 turns 28 B. & S. around "cold end" of L3.

L5—20 turns 24 B. & S., 0.35 in. diam., close wound.

L6—2 turns 28 B. & S., interwound with L5.

L7—As L1, emitter tap 1½ turns from ground.

RFC—Ferronube bead around supply lead.

☆

Publications Committee Reports

The committee met on 8th May when correspondence from VKs 3AL2, 4BS, 5ZYK, 5J7, "F" Magazine and the P.M.G. Department was received.

Technical articles were received from VKs 2ANQ, 3AMK and Paul Rodoukoff. The committee considered a suggestion that copy date be advanced to the first of each month in an endeavour to have "A.R." in the hands of the mailing service before other publications, one of which has a circulation of 450,000. After a full discussion, it was decided to try to streamline an already tight schedule to save the few days needed in the preparation of "A.R." and get priority at the mailing service. The matter is to be reviewed in three months time. Much will depend on the various correspondents getting copy to us on time.

The effect of the heavy increase (28 per cent.) in postal costs was considered, but as it will only affect us for portion of the year, it was agreed the result would not be very great. The financial year and the position can be reviewed during the last quarter of our year.

The supply of technical articles on hand was reviewed and found to be satisfactory for our immediate needs. Advertising support was reported as being about average for the first three months, enabling us to publish three 22-page issues instead of our usual 25-page issues.

W.I.A. D.X.C.C.

Listed below are the highest twelve members in each section. Position in the list is determined by the first number represents the participant's total countries less any credits given for deleted countries. The second number shown represents the total D.X.C.C. credits given, including deleted countries. Where totals are the same, listings will be alphabetical by call sign.

Credits for new members and those whose totals have been amended are also shown.

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VK3RU	312/286	VK3TL	255/268
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VK6MK	286/315	VK2APK	234/227
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New Members			
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VK4FJ	280/313	VK4HR	255/278
VK3AGH	281/284	VK3XB	248/252
Amendments:			
VK3APK	245/238	VK4TY	236/247
VK3TL	245/281	VK4KS	109/114

OPEN			
VK3AGH	310/228	VK3EO	285/316
VK3RU	307/230	VK4FJ	284/316
VK3ADE	305/229	VK4TY	284/286
VK3VN	300/315	VK2ACX	276/280
VK6MK	300/317	VK3ARX	266/284
VK4HR	286/318	VK3TL	275/279
Amendments:			
VK2APK	257/278	VK4PX	109/174
VK4KS	108/203	VK3AXK	111/114

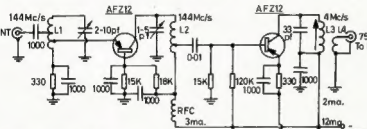


FIG. 1. 144Mc/s CONVERTER

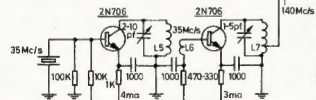


FIG. 2. CHASSIS LAYOUT.

A PARABOLIC ANTENNA

CYRIL EDMONDS,* VK3AEF

THE building of a "Dish" has been contemplated by the author on many occasions in the past and always postponed due to the difficulties and problems of construction. A start was eventually made on a 15 ft. dish and on completion it became very apparent that, as with many other things, the difficulties are mainly in the contemplation rather than the execution.

The 15 ft. dish was constructed from materials on hand and the final results were so gratifying that an immediate start was made on a 30 ft. version which would have sufficient gain for "Moonbounce".

In the case of a theoretically perfect parabolic reflector which would give a parallel-sided beam, i.e. infinite gain, there are three main requirements:—

- (a) Point source, illumination of the reflector.
- (b) Even illumination of the whole of the reflector surface
- (c) Perfect parabolic shape.

In the practical case one must use an illuminating source, such as a half-wave dipole. This in turn does not have a radiation pattern which is the same strength in all directions (even illumination). Also it is desirable that all radiation in the desired direction come from the reflector and not from the exciting dipole direct.



The exciting source was therefore chosen to be a dipole with a disc reflector firing into the parabolic reflector.

The focal length of the parabola was chosen for the best compromise between this and the theoretical considerations of (a) and (b).

Certain departures from perfect parabolic shape can be tolerated before degradation of the beam and minor lobe structure becomes too severe and a consensus of opinions seems to indicate an inaccuracy limit in the order of one-tenth wavelength which, in the case of 432 Mc., becomes nearly three inches. As one inch construction toler-

ance is quite easy to maintain, this was not considered a problem.

By the same consideration, $\frac{1}{8}$ inch mesh chicken-wire was chosen as the material with which to cover the reflector. In the final results these points seemed perfectly justified and judging by the experiences of others would probably be quite suitable for 1296 Mc. Basic measurements and parameters of a parabolic reflector are:—

1. Diameter,
2. Shape,
3. Focal length.

The diameter is chosen to suit the particular requirements and/or limitations, in this case 15 ft. and later 30 ft. The shape can be derived from the formula $Y^2 = 4AX$, once the focal length has been decided (see Fig. 1).

Y is distance along Y axis.

X is distance along X axis.

A is focal length.

Example: Focal length is 8 ft., find point P.

$$Y^2 = 4AX \therefore Y^2 = 4 \times 8 \times X$$

$$Y = 6 \text{ ft.} \therefore 6^2 = 32X$$

$$\therefore X = 36 \div 32$$

$$= 1 \text{ ft. } 1\frac{1}{2} \text{ ins. along X axis.}$$



FIG. 1.

Calculations and measurements indicated that a half-wave dipole with a disc reflector spaced one quarter wave would have a 6 db beam width of approximately 105 degrees. On this basis the focal length was made 8 ft. Illumination 6 db down at the edges of the parabolic reflector was chosen as the best compromise between even illumination and "spill-over" (power lost because it misses the reflector).

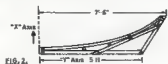


FIG. 2.

CONSTRUCTION

The first step was to work out the X and Y co-ordinates for the focal length of 8 ft. (see Fig. 3). The constructing materials were 2" x 1" oregon (an old wooden mast in the junk box), $\frac{1}{8}$ " dowseling (local hardware), $\frac{1}{8}$ " mesh chicken wire, wood screws, 1" nails and tying wire.

The parabolic curve was marked out on a piece of level ground. Three pieces of 2" x 1" were then made into

a triangle and a length of $\frac{1}{2}$ " dowel (which bends easily) was then fastened to the triangle by means of straps and spacing pieces (see Fig. 2) to have the required shape.

This is the frame for the radius of the dish, eight are required and are fastened together as the spokes of a wheel.

Y Axis	X Axis
1'	$\frac{1}{8}$ "
2'	$\frac{1}{4}$ "
3'	$\frac{3}{8}$ "
4'	$\frac{1}{2}$ "
5'	$\frac{5}{8}$ "
6'	1' $\frac{1}{8}$ "
7'	1' $\frac{3}{8}$ "
7' 6"	1' $\frac{5}{8}$ "

Figure 3.

A wooden framework 3 ft. by 3 ft. is made of 3" x 1 $\frac{1}{2}$ " timber and is the hub to which the eight spokes are fastened, by means of wood screws and brackets (see Fig. 4).

The pivoting and rotating arrangement is fastened to the underside of this frame.

A 15 ft. diameter ring was then made of $\frac{1}{4}$ " dural tube and fastened to the outer ends of the spokes.

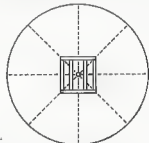


FIG. 4.

The chicken wire, which is 3 ft. wide, is then laid across the dish tightly, but without stretching, and tied to the shaped dowel with tie wire. Adjacent lengths should butt each other at the centre of each run and overlap slightly towards the edges to allow for the curvature of the reflector. They are then joined together with more tie wire. The twisted joints in the chicken wire were run in the same plane as the feed dipole.

The feed dipole is mounted on a tubing mast in the centre of the dish, of such a length that the dipole is at the focal point, i.e. 8 ft. The coax. cable (72 ohms) runs up the inside of the tubular mast and the mast itself is guyed in a central position by means of four nylon guy wires which are fastened to the edge of the dish.

The s.w.r. at the design frequency, after adjustment, was better than 1.2 to 1.

(Continued on Page 18)

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A TRANSISTORISED RECEIVER—FURTHER IDEAS

HAROLD HEPBURN,* VK3AFQ

IN the March 1967 issue of "A.R." it was mentioned that modifications could be made to the Moorabbin project receiver to cover frequencies other than the design range of 3.5-4.0 Mc.

Ced Smythe, VK3ACH, has evolved a very simple and worthwhile system along these lines and I am indebted to him for permission to pass it on to interested readers. When modified, the receiver will tune 1.8 to 5.0 Mc. in five (unequal) bands, thus allowing reception of the 160 metre Amateur band, fire, C.F.A., oil rig, small ships and fishing fleet frequencies as well as the Sydney University station VL2UV.

In addition, one switch position gives a clear megacycle coverage which is very suitable for use with v.h.f. converters, while another gives the original design range of 3.5-4.0 Mc. By using the local oscillator 455 Kc. below the signal frequency an additional range is obtained.

Table 1 details the approximate ranges available after the modifications have been made.

Switch Position (See Fig. 2)	Coverage Kc.
5	1800 - 1900
4	1900 - 2250
3	2200 - 2850
2	(a) 2800 - 4100
	(b) 3700 - 5000
1	3500 - 4100

Table 1.

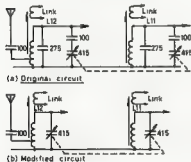


FIG. 1. R.F. MIXER STAGES.

R.F./MIXER STAGES—MODIFICATIONS

L12 (the r.f. coil) and L11 (the mixer coil) are rewound as shown below. In both cases the original Ducon Q2 pot cores are used. The pin connections given are those used in the project instructions.

L12—R.F. Coil:

Pin 3 to Pin 2—5 turns, 29 B. & S.
Pin 2 to Pin 1—20 turns, 29 B. & S.
Pin 5 to Pin 4—2½ turns, 29 B. & S.

L11—Mixer Coil:

Pin 3 to Pin 1—25 turns, 29 B. & S.
Pin 4 to Pin 5—1½ turns, 29 B. & S.

Reference to Fig. 1 will show that, in addition to rewinding the coils, the two 100 pF. series condensers are removed and replaced with a "jumper" and that the two 275 pF. condensers have been removed completely. Each section of the two gang condenser is thus connected right across its associated coil.

With these simple modifications the front end will cover 1.8-6.5 Mc. Such a wide coverage calls for some form of reduction drive. One of the small 1¼" diameter Japanese types having a 0-100 scale will do admirably and fits the space available without interfering with the layout of other components. It is of course essential to provide an insulated coupling between the drive and the spindle of the two gang condenser.

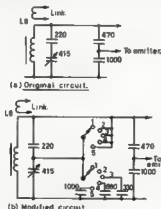


FIG. 2. LOCAL OSCILLATOR.

LOCAL OSCILLATOR STAGE—MODIFICATIONS

No modification is made to the original oscillator board but a small 2 pole 5 way wafer switch and three condensers are added. Fig. 2 shows the circuit before and after modification.

The switch is mounted centrally above the r.f. and a.f. volume controls on the left hand side of the front panel. The three extra condensers (which are preferably ½" silver mica components) are mounted between the switch contacts and a common bus wire anchored to the variable condenser frame. The extra leads from each side of the 220 pF. series capacitor must be of stiff wire to ensure mechanical stability. The lead from the junction of the 220 pF. series capacitor and the tuning condenser is best taken from the stator terminal on top of the tuning gang.

Position 1 of the switch leaves the added components out of circuit and thus the original frequency range is not altered.

Position 2 of the switch short circuits the 220 pF. series capacitor and thus increases the coverage in the low frequency direction.

Positions 3, 4 and 5, besides keeping the 220 pF. series capacitor shorted out also progressively add parallel capacity to the circuit and thus extend the low frequency coverage still further.

When in Position 2, the range of the oscillator is 3255 Kc. to 4555 Kc. If the oscillator is used on the high side of the signal the resultant signal frequency range will be 2800-4100 Kc. If, however, the oscillator frequency is used on the low side of the signal the resultant signal frequency range will be 3710 to 5010 Kc. Since there is plenty of selectivity in the front end either of these ranges can be chosen simply by the appropriate setting of the r.f./mixer dial.

As a guide to the setting of the r.f./mixer dial, 5 Mc. appears at a reading of about 25, while 1.8 Mc. appears at a reading of nearly 100.

TWO METRE CONVERTER

(Continued from Page 5)

over ¼". These eight coils are first wound on a 5/32" drill shank, the termination bent over to enter the lugs on the base plates and then sprung over the coil forms and soldered in place.

L1, the aerial input coil, is tapped one turn up from the earth end for the antenna connection.

Screening cans may be fitted to the coils after completion but were not needed in the prototype.

L8, the pi-output coil, consists of 55 turns of 36 a.w.g. while L7 and L9 consist of a 20-turn winding of 32 a.w.g.

Fabrication of the coils is made easier if the enamel covering is the pink tinged polyester type sold under various names, but which takes solder without the need for scraping away the insulation.

The complete unit is constructed on a 5½" x 3" printed circuit board using the "maximum retained copper" technique. The positive and negative supply rails are kept as separate entities and all d.c. returns, i.e. emitter, base and collector resistors, made to these rails. All other earthy terminations, i.e. ends of coils, condensers, etc., are made to the main mass of copper which is earthed directly. Both supply rails are laterally decoupled to earth with 1000 pF. ceramic discs and thus the converter can be used with either pole of the supply earthed.

It is the intention of the Moorabbin Club to assist those interested in making this converter and within a week or so of this article appearing in print a complete kit of parts will be available. It is estimated that the price will be \$29.75 including a crystal to give output on 3.5 Mc.

Queries should be addressed to the Hon. Secretary, 4 Elizabeth St., East Brighton, Vic.

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GETTING STARTED ON 6

A. F. BIRCH,* VK2ZF8

THIS article is intended to assist and advise, not only the newcomer to 6 metres, but also the class of operator who, through no fault of his own, has had little or no experience in building equipment of his own.

DESIGN

Some thought must be given to the purpose of the unit to be described, the user's requirements and his specifications, shape and size, circuit design and lastly component layout—the last named being the function which will eventually greatly assist the operator in getting into and servicing his equipment with the least inconvenience.

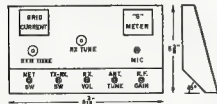
It is relatively easy work to prepare a circuit which will include all functions to meet the user's specifications and then build a cabinet around it, but somewhat harder work and thought must be given to the task of having a cabinet of a certain size and shape available and putting all desirable functions inside it. It is sincerely hoped that the following article will assist in this way.

METALWORK

There is no doubt that metalwork is the greatest bugbear to about 90% of all home constructors, however I found my fellow Ham to be a very helpful and friendly person, and would advise that you seek assistance if you cannot do it yourself.

For this type of unit there are several types of cabinets available, from the Playmaster to the several varieties of Taxiphone units, which can be used as a case for your unit. The author has used successfully the Pye "Ranger" cabinet, a beautifully made unit, adequately ventilated and shielding the equipment inside.

The panel is from the original cabinet but has the complete front cut out, leaving a 3/16 inch flange all around, to which a new front is fitted of 18 gauge mild steel or brass. After spot welding or soldering, the joint is filled with nitro-cellulose stop-putty and finished off to give a roll-over edge.



The new panel is cut out to take the controls shown in Fig. 1.

The chassis measures 12½ x 8½ in. outside (including flanges) and is 1½ in. deep. It is fitted with side brackets, which are attached to the panel by eight mushroom-head chromium plated

screws (1/8 x 1/4 in.), at the points marked "X" on the panel layout.

Apart from shielding around the v.h.f. converter section, and drilling and socket mounting, your metalwork is finished.

Careful layout of sections and placement of components has resulted in no further shielding being found necessary, i.e. between stages in the tuneable i.f. or between modulator and r.f. sections, etc.

Later in this article full details of chassis layout, circuits and placement of major components and switching will be given.

THE CONVERTER

A number of features were considered in the choice of the r.f. amplifier, the main features being simplicity, ample gain, freedom from cross-modulation and a reasonable noise figure. The tube chosen was a single 417A in grounded-grid configuration (Fig. 2), this being followed by a conventional 6U8 pentode mixer and triode as a cathode follower output.

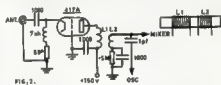


FIG. 2.

Of all the u.h.f. triodes designed for grounded grid service, the 417A has by far the highest transconductance and above all the most ideal pin connections.

A capacitive connection to the input cathode was chosen, not only because of its simplicity, but because it was a case of matching 72 to 200 ohms and with capacitive coupling the main point is that the value of C should be such that Xc at 52 Mc. is as low as possible. Xc of 1,000 pF. at 52 Mc. being 0.3 ohm approximately.

R.f. chokes must be inserted in both heater leads, one being earthed, the other to the heater supply voltage and by-passed at the supply end. The other is shown in the cathode circuit and all are of 7 uH. They are wound on a high value resistor, 5/16 in. diameter, and consist of 44 turns of 30 g. B. & S. wire, close wound.

L1 and L2 are wound on a length of Aegis coil former, 5/16 in. diameter, with 26 g. B. & S. enamelled wire. L1 is 16 turns close wound, L2 is 10 turns close wound with a separation between the two of approximately ¼ inch. Resonance is very easy to attain with the iron dust slugs inserted from the outside ends.

The 6U8 stage is the conventional circuitry and the oscillator is one half of a 12A77, using a 43 Mc. crystal.

THE TUNABLE LF.

A range of 7-10.5 Mc. was chosen, the full 4 Mc. could be used if so

desired, provision being made for tuning down to 50 Mc. for JAs and ZLs.

These stages are quite conventional and there are a variety of circuits available to suit the particular builder's requirements. Note, however, that delayed a.v.c. (as shown in Fig. 4) is applied only to the two i.f. stages and that manual gain is derived from a 5K potentiometer in the cathode of the r.f. stage.

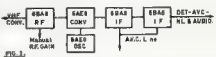


FIG. 3.

A.v.c. is left on all the time, because of the QSB on distant signals, there being no need for switching here.

Although the author has one of the lowest noise QTHs in Sydney, the noise limiter is also left in circuit all the time as an added precaution against those unwanted disturbances, no loss of signal being noticed.

All the diodes shown may be either OA200 or OA202, and the noise limiter shown was used with great success on a BC348 communications receiver.

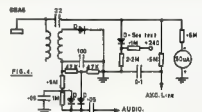


FIG. 4.

THE MODULATOR

For the microphone pre-amplifier there are a number of low noise tubes that may be used, but the E83F happened to be on hand.

The modulation gain control is a pre-set potentiometer and may be run flat out without over modulating. It is a separate control from the receiver audio gain, so that the 0.5 meg. isolating resistors from the grid of the first voltage amplifier are necessary to prevent interaction of the two controls.

The driver stage is a self-balancing paraphase p.p. inverter, R-C coupled to the 3/10 modulator, which Mullard recommend the use of a limiting value of 100K in the grid circuit in class AB1 operation.

Minus the E83F (Fig. 5), by looking at the switching arrangement, the 12AX7 and the 3/10 become the receiver audio frequency output. This switch performs the tx/rx function and apart from the net switch, is all the switching necessary within the unit.

The unit is designed to run off a d.c.-d.c. converter or from an a.c. source power supply, hence no standby position is desirable in the unit, particularly when operating from a tran-

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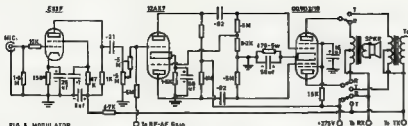


FIG. 5. MODULATOR

sistor supply. But when running on an a.c. supply the standby position can be incorporated in the power supply, by breaking the centre-tap of the transformer secondary. Also by incorporating no standby position in this switch, the voltage can be left connected to the plate of the 3/10 and 12AX7 all the time.

The modulation transformer is a 522 type, which is a close match for the 3/10 modulator to a 3/10 parallel connected final amplifier to be described next. The speaker transformer is a 10,000 ohms p.p. load type with any desirable voice coil impedance.

(3) The final tank, a pi-network, is set for maximum output at 52,300 Mc.

Final grid current was found to vary very little either side of 2.5 mA. and the r.f. power output was measured with a commercial type meter at 12 watts.

The reason for paralleling the 3/10 and using a pi-tank circuit was that the unit is used as a home station rig as well as a mobile unit, and this allows for matching the output to the load with a range of different impedances, as in a vertical whip or a yagi antenna.

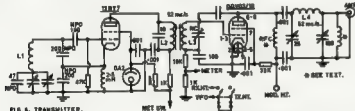


FIG. 6. TRANSMITTER

THE TRANSMITTER

The oscillator employs the Clapp v.f.o., operating on a fundamental of 17,333 to 17,555 Mc., giving a range of 52,000 to 52,600 Mc.

In the interests of stability, which has been very favourably commented on, zero temperature co-efficient capacitors have been used throughout the v.f.o. tank and, further, the screen of the 12BY7 has been voltage regulated at 150v.

The plate circuit is on 52 Mc., with a slug tuned coil and a 10 pF. capacitor across it. The grid of the paralleled 3/10 is also tuned to 52 Mc., the two coils being wound on 3/8 inch formers with about 1 inch spacing between the coils, which are both mounted vertically from the chassis. They are pre-set and staggered to about 100 Kc. either side of 52,300 Mc. and in actual operation tests have shown that with the v.f.o. tuned through its full range, the final grid current and incidentally both final plate current and r.f. output will only vary by a very small amount.

Alignment of tuned circuits is as follows: Firstly, the v.f.o. be calibrated in terms of the operating frequency.

(1) It is set to 52,200 Mc. and the following tuned circuits peaked for maximum final grid current and p.a. tank tuned for maximum output.

(2) The v.f.o. is then set to 52,400 Mc., the oscillator plate is left untouched, but the final grid and plate circuits are peaked as before.

However, some trouble was found in respect to local reception of Channel 7 (161-168 Mc.), from radiation of the 7th harmonic of 26 Mc. when using a 13 Mc. v.f.o. in an earlier rig.

This rig used two doubler stages before the final and after much thought on the subject it was decided to go higher in frequency with the v.f.o. and eliminate one stage, hence the 17,333 Mc. v.f.o. and the elimination of the 26 Mc. component.

TX COIL DATA

L1 (v.f.o.)—15 turns 22 B. & S., 3" diam., spaced 18 t.p.i.

L2, L3—On iron slug formers, 3" diam., 7 turns for L2, 6 turns for L3, but left open to suit available formers.

L4 (final tank)—5 turns, 14 gauge, 3" diam., spaced 1/4" between turns.

The plate tuning and loading capacitors are of 25 and 100 pF. maximum and of screwdriver adjustment. The loading capacitor will need a 100 pF. fixed high voltage type across it and, of course, the r.f.c.

The r.f.c. could be left out if the proper precautions were taken with the blocking capacitor, plate tuning and loading capacitors having suitable voltage ratings, but I'll give a good reason why it should be there.

In my own unit, after removing it I developed a very bad case of modulation accompanied by r.f. feedback as well as two mates about 20 Kc. either side of the carrier. The whole case and cabinet was hot to r.f. and to cure this state of affairs I had to turn the modulation gain down to a point where I had a reported 20% modulation. As a last resort, I wound a new r.f. choke for this spot and I'm happy to say I ended a most frustrating period.

COMPONENT LAYOUT

The dimensions given in Fig. 7 for component layout will provide no difficulties in wiring, but may be varied as desired if it is to be fitted into another cabinet of a different size.

(Continued on Page 18)

The neutralising circuit is quite conventional, the 0.001 uF. in series with the adjustable capacity, being a precaution against voltage breakdown in the small type variable capacity used.

T.V.I.

This rig is used at a location about 35 miles from the local Channel 10 transmitter and no trouble is experienced with the low power used, on the 4th harmonic.

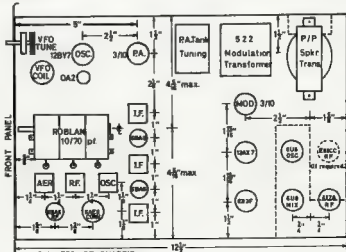


FIG. 7. TOP OF CHASSIS.



- ★ SW350 five-band a.m.-c.w.-s.s.b. Transceiver.
- ★ SW400 five-band a.m.-c.w.-s.s.b. Transceiver.
- ★ SW500 five-band a.m.-c.w.-s.s.b. Transceiver.
- ★ SW230XC 240v. a.c. Power Supply with Speaker in Matching Cabinet.
- ★ SW410 five-band Transistorised V.F.O.
- ★ SW22 Adaptor for extra V.F.O.
- ★ VX1 Plug-in Vox Control Unit.
- ★ SW45 five-band Manual Mobile Whip.
- ★ SW55 five-band Remote Automatic Mobile Whip.
- ★ WFS500 12v. d.c. 500 watt Mobile Power Supply.

OTHER EQUIPMENT

- ★ Galaxy Transceivers and Power Supplies.
- ★ Hallicrafters:—
SX146 all-band Amateur Receiver.
HT46 all-band Amateur Transmitter.
SX122 high class general coverage Receiver.
- ★ Hy-Gain, Mosley and Newtronics Beam Antenna.
- ★ Unadilla Cubic. Quad Antenna.
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GETTING STARTED ON 6

(Continued from Page 12)

However, this should likewise provide no great difficulty, as in the existing unit a vacant space is noted between the i.f. strip and the modulator. Thus the unit could be well fitted into a smaller area, but in the existing unit allowance was made for the possible future addition of a b.f.o., product detector, etc.

As it is, the emphasis is on amplitude modulation, the other modes being used

Nothing is worse than having to unnecessarily remove a number of components to remove or replace only one, nor is it desirable to bend components out of the way so as to be able to get to a given point with a meter.

For the more experienced constructors these points can be well appreciated, but for the less fortunate this is the best advice that can be given.

The best uplift to the morale of any constructor is to have a visitor walk into the shack and say that a particular piece of equipment is well built.

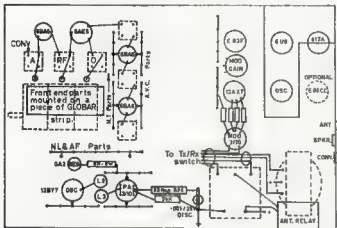


FIG. 8. UNDERSIDE OF CHASSIS.

by only a small minority of v.h.f. operators on 6 metres, in the author's experience.

If the layout given is adhered to no trouble will be experienced from such troublesome matters as feedback and it will be noted that the only shielding, either above or below the chassis, is confined to that surrounding the converter.

Further, and this is a follow up to the years spent in the commercial field, it has always been considered, for servicing reasons, good commercial design practice to keep valve sockets, i.f. transformers and other major removable components clear of a clutter of resistors and condensers, etc.

SIX-METRE CONVERTER

(Continued from Page 4)

cathode resistor or perhaps to provide additional feedback. One extra capacitor is all that is necessary to change the circuit to the "Robert Dollar" configuration in this case. However it is achieved, the requirement is to obtain stable, reliably-starting oscillation at the third overtone frequency, with no trace of output at the fundamental as established by tuning around this frequency on the station receiver.

The oscillator coil adjustment should not be very critical; as the slug is moved from the correct setting it will be found that oscillation stops abruptly on one side of the resonance, but dies away more gradually on the other side.

SOME FINAL SUGGESTIONS

If using a Roblan 10/70 p.f. gang, remove the two outer rotor plates from each section, leaving five.

Other tubes than 6BA6 may be used in r.f. and i.f. stages, but will need taming down or running from a much lower supply voltage.

A 6BW6 goes well as a final on 6 metres, and one also as a modulator using modified Heising modulation; also a 6AU6 as a microphone pre-amplifier.

There are many small variations in components that could be incorporated in your unit, so go to it. I wish you all the success I have had with my own.

Oscillation may be monitored with a voltmeter on the "earthy" end of the oscillator plate coil; the reading will be higher the more vigorously the stage is oscillating.

Once the oscillator is behaving itself, alignment of the r.f. circuits is simply a matter of peaking the slugs (including the multiplier plate circuit) on whatever signals are available, either from Amateur stations, a signal generator, or Channel 0 sound. If available, a sweep generator is the most sophisticated way of doing the job, but this is by no means necessary.

Performance of the converter, using a reverse-tuning i.f. around 4 to 2 Mcs., has been above reproach. It is possible, with the beam aimed directly at Mt. Dandenong to tune to within 100

A PARABOLIC ANTENNA

(Continued from Page 9)

The beam width to the 3 db points was measured by transmitting to a field strength meter while rotating the dish, and checked by measuring the noise received from the sun as it passed through the beam, and was found to be 12 degrees parallel to the dipole and 10 degrees perpendicular to the dipole. This seems consistent with expected performance. The gain on 432 Mc. is approximately 24.5 db over a dipole.

Minor lobes were too low in strength to be measured.



The beam was found to be unsymmetrical; this was corrected by adjusting the guy wires to position and the feed more accurately in the centre of the dish (a one-inch error in position was discernable as a distortion of the beam symmetry).

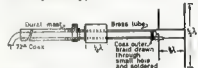


FIG. 9.

The foregoing type of construction is not suitable for anything larger than a 15 ft. diameter dish.

A 30 ft. dish is, at the moment, under construction but the material used is dural tubing with 16 spokes instead of 8, of girder type and with tubular rings at every two feet of radius.

Also it is intended to make the feed dipole array plug-in to facilitate multi-band operation.

Kcs. of the Channel 0 sound frequency before hearing any trace of it, even though when tuned right in the signal is 60 db over S9! Elsewhere in the band the only traces of Channel 0 (three in all) are at the receiver image frequency (910 Kcs. from the direct signal) which is about S9 due to the receiver's image ratio only being about 60 db, and two other spots at about S7 and S5 which are probably due to oscillator harmonic mixing effects. Cross-modulation, even of the weakest signals, is completely absent, while the sensitivity as measured with a signal generator is such that a tenth of one microvolt is plainly audible. So, on the receiving side, I can live with Channel 0. As far as transmitting is concerned? - well, that's another story!

REMEMBRANCE DAY CONTEST, 1967

A perpetual trophy is awarded annually for competition between Divisions. It is inscribed with the names of those who made the supreme sacrifice, and so perpetuates their memory throughout Amateur Radio in Australia.

The name of the winning Division each year is also inscribed on the trophy and in addition, the winning Division will receive a suitably inscribed Certificate.

Objects

Amateurs in each Call Area, including Australian Mandated Territories and Australian Antarctica will endeavour to contact Amateurs in other Call Areas on all bands. Amateurs may endeavour to contact any other Amateurs on the authorised bands above 52 Mc. (i.e. intrastate contacts will be permitted in the v.h.f./u.h.f. bands for scoring purposes).

Contest Date

0800 hrs. G.M.T. Saturday, 12th August, 1967, to 0759 hrs. G.M.T., Sunday, 13th August, 1967.

All Amateur Stations are requested to observe 15 minutes' silence before the commencement of the contest on the Saturday afternoon. An appropriate broadcast will be relayed from all Divisional Stations during this period.

RULES

- There shall be four sections to the Contest:—
(a) Transmitting Phone.
(b) Transmitting C.W.
(c) Transmitting Open.
(d) Receiving Open.

2. All Australian Amateurs may enter the Contest whether their stations are fixed, portable or mobile. Members and non-members will be eligible for awards.

3. All authorised Amateur bands may be used and cross-mode operation is permitted. Cross-band operation is not permitted.

4. Amateurs may operate on both Phone and C.W. during the Contest, i.e. phone to phone or C.W. to C.W. or Phone to C.W. However only one entry may be submitted for sections (a) to (c) in 1.

An open log will be one in which points are claimed for both phone and c.w. transmissions. Refer to Rule 11 concerning Log entries.

5. For Scoring, only one contact per station per band is allowed. However, a second scoring contact can be made on the same band using the alternate mode. Arranged schedules for contacts on the other bands are prohibited.

6. Multi-operator stations are not permitted. Although log keepers are permitted, only the licensed operator is allowed to make contact under his own call sign. Should two or more wish to operate any particular station, each

operating, then the word "log" followed by their own call sign, e.g., "CQ Remembrance Day from VK4BBB log VK4BAA."

C.W. Substitute operators will call "CQ RD de" followed by the group call sign comprising the call of the station they are operating, an oblique stroke and their own call, e.g., "CQ RD de VK4BBB/VK4BAA."

Contestants receiving signals from a substitute operator will qualify for points by recording the call sign of the substitute operator only.

7. Entrants must operate within the terms of their licences.

8. Cyphers—Before points may be claimed for a contact, serial numbers must be exchanged and acknowledged. The serial number of five or six figures will be made up of the RS (telephony) or RST (c.w.) reports plus three figures, that will increase in value by one for each successive contact.

If any contestant reaches 999 he will start again with 001.

9. Entries must be set out as shown in the example, using ONLY ONE SIDE of the paper and wherever possible standard W.I.A. Log Sheets should be used. Entries must be clearly marked "Remembrance Day Contest 1967" and must be postmarked not later than 4th September, 1967. Address them to "Federal Contest Manager, W.I.A., G.P.O. Box N1002, Perth, W. Aust., Late entries will be disqualified.

SCORING TABLE

		To									
		VK0	VK1-2	VK3	VK4	VK5-8	VK6	VK7	VK9		
From	VK0	—	6	6	6	6	6	6	6		
	VK1-2	6	—	1	2	3	5	4	6		
	VK3	6	1	—	3	2	5	4	6		
	VK4	6	1	2	—	3	6	5	4		
	VK5-8	6	2	1	3	—	6	4	6		
	VK6	6	1	2	4	3	—	5	6		
	VK7	6	2	1	4	3	5	—	6		
	VK9	6	1	2	3	4	5	6	—		

Note.—Read table from left to right for points for the various call areas.

10. (a) Interstate scoring is as per published table for all bands; 52 Mc. and above included.

(b) Intrastate scoring for all bands above 52 Mc. will be on the basis of one point per contact.

Portable Operation: Log scores of operators working outside their own Call Area will be credited to that Call Area in which operation takes place, e.g. VK5ZP/2. His score counts towards N.S.W. total points score.



Remembrance Day Contest Trophy

will be considered a contestant and must submit a separate log under his own call sign. Such contestants shall be referred to as "substitute operators" for the purposes of these Rules and their operating procedure must be as follows:—

Phone: Substitute operators will call "CQ RD" or "CQ Remembrance Day" followed by call of the station they are

EXAMPLE OF TRANSMITTING LOG

Date/ Time G.M.T.	Band	Emission and Power	Call Sign Worked	RST No. Sent	RST No. Received	Points Claim.

Note.—Standard W.I.A. Log Sheets may be used to follow above form.

EXAMPLE OF RECEIVING LOG (VICTORIAN S.W.L.)

Date/Time G.M.T.	Band	Emission	Call Sign Heard	RST No. Sent	RST No. Received	Station Called	Points Claim.
AUG '67							
13 0810	7 Mc.	A3 (a)	VKERS	58002	—	VKERU	2
13 0812			VKERSU	58007	—	VK7EL	5
13 1035			VK4ZAZ	58010	—	VK4ZDR	2
13 1040			VK3ALZ	58025	—	VK3QV	1

Note.—Standard W.I.A. Log Sheets may be used to follow the above form.

11. All logs should be set as in the example shown and in addition will carry a front sheet showing the following information:

Name Section
Address Call Sign
..... Claimed Score

No. of Contests

Declaration: I hereby certify that I have operated in accordance with the Rules and spirit of the Contest.

Signed

Date

All contacts made during the Contest must be shown in the log submitted (see Rule 4). If an invalid contact is made it must be shown but no score claimed.

Entrants in the Open Sections must show c.w. and phone contacts in numerical sequence.

12. The Federal Contest Manager has the right to disqualify any entrant who, during the Contest, has not observed the regulations or who has consistently departed from the accepted code of operating ethics. The Federal Contest Manager also has the right to disallow any illegible, incomplete or incorrectly set-out logs.

13. The ruling of the Federal Contest Manager of the W.I.A. is final and no disputes will be discussed.

Awards

Certificates will be awarded to the three top scoring stations in each of Sections (a) to (c) of Rule 1 above in each Call Area, and will include top scorer in each Section of each Call Area operating exclusively on 52 Mc. and above. VK1, VK8, VK9 and VK0 will count as separate areas for awards. There will be no outright winner for Australia. Further Certificates may be awarded at the discretion of the Federal Contest Manager.

The Division to which the Trophy will be awarded shall be determined in the following way.

By using the Equation,

$$S = \frac{P + 175(N - E)}{1000}$$

where—

S = State's Trophy Tally Points.

P = Total score of State.

N = Total log entries received.

E = Entrants from the State concerned.

VK1 scores will not be included with VK2, nor VK8 with VK5.

The trophy shall be forwarded to the winning Division in its container and will be held by that Division for the specified period.

RECEIVING SECTION

(Section D)

1. This section is open to all Short Wave Listeners in Australia, but no active transmitting station may enter.

2. Contest times and loggings of stations on each band are as for transmitting.

3. All logs shall be set out as shown in the example. The scoring table to be used is the same as that

used for transmitting entrants and points must be claimed on the basis of the State in which the receiving station is located. A sample is given to clarify the position.

It is not sufficient to log a station calling CQ—the number he passes in a contact must be logged.

It is not permissible to log a station in the same call area as the receiving station on the m.f. and h.f. bands 1.8-30 Mcs., but on bands 52 Mcs. and above such stations may be logged, once only per band, for one point. See example given. VK1/VK3 and VK5/VK8 are considered to be the same area for scoring purposes.

4. A station heard may be logged once on phone and once on c.w. for each band.

5. Club receiving stations may enter for the Receiving Section of the Contest, but will not be eligible for the single operator award. However, if sufficient entries are received a special award may be given to the top receiving station in Australia. All operators must sign the Declaration.

Awards

Certificates will be awarded to the highest scorers in each call area. Further Certificates may be awarded at the discretion of the Federal Contest Manager.

☆

RADIO MESSAGES ARE SECRET

The Australian Post Office has expressed concern over some evidence that radio communications are being intercepted from time to time and the information so gained used to the listener's advantage or as the basis for news items in the press, radio or television news sessions.

The Director-General of Posts and Telegraphs, Mr. T. A. Housley, points out that both the persons who intercept the messages and the news media publishing such information contravene Regulations under the Wireless Telegraphy Act and the Broadcasting and Television Act which prohibit the disclosure or the use, without lawful authority, of any message transmitted by a radio station, other than a broadcasting or television station.

Mr. Housley says the Post Office has a responsibility to ensure the secrecy of all messages and conversations exchanged through radio communication stations whether they be provided for public use by the Department or stations operating in licensed services, such as those used by Police, Ambulance, Fire Brigades, and other public authorities, or by commercial undertakings.

The Post Office feels that it is perhaps opportune to remind all those who, in their enthusiasm for DX listening, may overhear many types of radio transmissions of the privacy of all that passes between radio stations and their obligation to comply with the secrecy provisions of the Regulations.

INFLATABLE RADIO ANTENNA MAST USED IN VIETNAM

A tube-shaped, 60-foot inflatable radio antenna mast is now being used as a long-distance communications aid to fighting forces in the jungles of Vietnam.

Carried in a backpack and quickly deployed in dense terrain, the revolutionary lightweight antenna is being manufactured by Goodyear, who are perhaps more famous as the biggest manufacturer of tyres in the world.

The high-strength mast, constructed of a flexible, reinforced plastic-cloth fabric, can be extended to a height of 60 feet to clear trees, foliage and other obstacles in the jungle. This gives the radio a line-of-sight range of about 25 miles for ground-to-ground or ground-to-air communications. In contrast, portable radios using conventional short whip antennas sometimes have an effective range of only one-tenth or two-tenths of a mile because foliage absorbs their signals, according to Goodyear.

The inflatable antenna is connected to the radio by a small co-axial cable. The radiating element, fabricated of wire, is mounted at the top of the mast and can be adjusted in length to be tuned to the desired V.H.F. or U.H.F. frequency.

These antenna masts are seen by company officials as particular aids in situations where a combat unit becomes completely isolated by the enemy. Should this happen, the masts can be deployed quickly and a signal for help can be radiated to either ground or air support units.

Deflated, the mast rolls into a one-cube-foot package, which is carried in a backpack along with a foot pump, hand crank, guy anchors and a repair kit. The entire backpack, including the mast and associated equipment, weighs about 36 pounds.

Once the mast is removed from the backpack, inflation is accomplished by the manually operated foot pump in approximately 15 minutes. The mast, which tapers from a nine inch diameter base to five inches in diameter at the top, is supported by nylon guy lines.

During retraction, the mast is completely packaged into the base by the hand crank. It then is put into the backpack together with its associated support equipment, ready for subsequent use.

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F-SERIES S.S.B. EQUIPMENT

GOING S.S.B.?

What are the important considerations in the choice of S.S.B. equipment? Indeed there are many factors involved, including the not so technical matters of individual requirements of appearance, size, price, etc. It may be desired to fully equip, or add to an already partly equipped S.S.B. station. The Yaesu F-Series sets are compatible with other S.S.B. equipment, and will provide a suitable choice for your requirements for all Amateur bands, 80-10 metres.

Performance! It is without doubt that the high quality of design, construction and operation of the Yaesu equipment contribute to increased popularity. Tests on receiver sensitivity and transmitter power output confirm the high efficiency of operation. In the P.A. circuits, coils of adequate size on ceramic formers are provided in an uncrowded layout. All equipments feature built-in 230V. A.C. 50 c.p.s. power supplies.

FR-100B, FL-200B. The ideal home station combination for elegance, convenience of operation and versatility. Can be connected separately or transceive, for S.S.B., A.M. or C.W.

FR-100B Dual conversion receiver with crystal locked front end. Sensitivity, better than 0.25 μ V for 10 db S+N/N ratio. Two mechanical filters, 2.1 Kc/s. for S.S.B. and 4 Kc/s. for A.M. Crystal filter for C.W. High reduction precision gear driven dial with read out of 1 Kc/s. Selectable S.S.B. and C.W. with ring demodulator, A.M. with diode detector. Each tuning range is 600 Kc/s.

FL200B: Transmitter with Kokusai mechanical filter. Two 6JS6A tubes in p.a., 240w. p.p.s. input. VOX, ALC, USB-LSB selection. Complete with antenna relay and provision for receiver muting and linear control. For C.W., break-in operation is possible, T9X note, clean, chirpless keying. All plugs and microphone supplied.

FR-50, FL-50: Lowest priced S.S.B. combination with outstanding performance. May be operated in the transceive condition. Alternatively, the transmitter may be operated independently with either the built-in VXO or with the matching transistorised VFO, the FV-50.

FR-50: Dual conversion receiver. Sensitivity, 0.5 μ V, for 10 db S+N/N ratio. Low drift transistorised h.f.o. becomes v.f.o. for FL-50 when transceiving. Second o.c. crystal controlled. Product detector for S.S.B. and C.W. Diode for A.M. detection.

FL-50. Transmitter with five-crystal lattice filter and 5172.4 Kc/s. carrier crystal P.T.T. control via p.b. mic. Antenna relay and provision for receiver muting and linear control. S.S.B., A.M. and C.W. 75 watts, 80 to 10 metres.

FL-1000: LINEAR AMPLIFIER. Of sturdy and neat construction, this linear provides the extra boost which is a decided advantage on the DX bands. Increases your DX reports to 2 to 3 "S" points. Four 6JS6A in g.g., 80-10 metres. Will match any S.S.B. exciter capable of output power of 30 to 100 watts p.p.s. Approved for Amateur S.S.B. use.

FT-100 Transceiver: Transistorised, for highest overall transmission efficiency, approx. 45% (12v input to R.F. output). The ideal mobile/portable rig. Five bands, power supply built-in. Operate A.C. or D.C. simply by changing power cord. Sensitivity on receive, 0.5 μ V 10 Kc/s. offset tuning. Gear driven dial giving accurate linear tuning with 1 Kc/s. read out. Exceptionally stable VFO, instant operation, drift less than 100 c.p.s. in hour. P.A., 2 x 6JM6, 120w. p.p.s. Low battery drain.

Type F Generator: This is a complete assembly of a crystal filter S.S.B. generator as used in the FL-50 transmitter. Can be used as the basis of an S.S.B. rig on V.H.F. or H.F.

FF-30DX L.P. Filter: This is a three-section filter for T.V.I. reduction, with a cut-off frequency of 35 Mc/s.

FV-50 VFO Transistorised, gives full band coverage for FL-50. Can be used with other 5 Mc/s. filter transmitters.

SP-50 and SP-100: Matching speakers for above equipment.

F-Series valves, diodes, spares, etc., stocked.

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SIDEBAND

Sub-Editor: PHIL WILLIAMS, VK5NN

CLIPPER TYPE COMPRESSORS

Several years ago in "QST" there appeared an article by Squires and Clegg (Speech Clipping for Single Sideband, "QST," July 1964) dealing with the business of increasing the level of modulation in an s.s.b. transmitter without introducing excessive distortion. The method is highly satisfactory if not grossly abused, and provided the power supplies and linear amplifiers are designed to work at the higher level, with an average power level tending to be nearer to the peak capability of the system.

80 watt transformer which has not yet blown up on 150 watts, but I dare not push it any harder. Besides, it is nice to sound yourself on 80 and 40 when speaking with friends.

But DX contests are for those with the signals which get through the QRM, without being "klobbered" out of readability, so these clipper/compressors look very tempting.

These extra h.f. crystal filters are expensive enough one at a time for us out here in Australia, and there is, too, the problem of the fellow with the bought transceiver which he dares not

Complete compressor units of this type are available from several manufacturers overseas at a price which would make them poor value in this country—but prices may come down if quantity production permits.

The use of 8 Kc. as the carrier in the clipper translates the original 0.3 to 3 Kc. audio signal, to the 8-11 Kc. region. When this signal is clipped the harmonics fall above 16 Kc., so that a very simple I.p. filter in the 12 to 14 Kc. region is all that is necessary to eliminate the harmonics.

Demodulation using the same 8 Kc. oscillator, restores the signal to the original speech range so that it may be plugged straight into any commercial exciter or transceiver.

Should you wish to design the compressor into an exciter using, say, a 2 Kc. wide mechanical filter, the compressed 8-11 Kc. signal (nominal range) does not have to be demodulated back to the speech range, but can be fed straight to the balanced modulator in the exciter (it can still be handled by the a.f. amplifier), but the carrier frequency fed to the balanced modulator needs to be displaced a further 8 Kc. from the original carrier frequency specified for the filter (but you will need a little ingenuity to restore the netting facility).

Although I have not personally tried the schemes of Figs. 2 and 3, I have seen and heard them as used by other Amateurs, and have seen Fig. 2 done commercially at 18 Kc. It was certainly very effective.

The answer to the obvious question must be given before signing off for this month. Well, why can't you just clip the audio signal, and filter out everything above 3 Kc.? This is done in ever so many circuits in Amateur magazines. The answer is that harmonics of the lower audio frequencies, such as 400 c.p.s. will appear right up through the range at 400 Kc. intervals. With small amounts of clipping, say 3 or 4 db, this can be tolerated, but with 10 db or more, the straight audio clipper is far from satisfactory.

Before anybody takes me to task for calling a clipper/filter, a compressor let me say that I am well aware of the sort of thing which the gain controlled amplifiers will do. They have their application for broadcasting, and a.l.c., now common in many exciters, accomplishes a similar result. These things do control levels, but do not re-shape the speech for more DX intelligibility as the clipper types does.

I shall be pleased to hear from anybody who has developed his own circuits for these systems and wish any experimenters the best of DX with their own interpretations of the scheme.

73 for now, Phil VK5NN.



FIG. 1. 3.5-Mc. EXCITER USING 3 FILTERS AT CARRIER FREQUENCY.

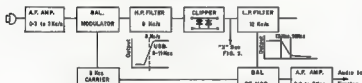


FIG. 2. CLIPPER TYPE COMPRESSOR AT SUPER AUDIO FREQUENCIES USING THREE A.F. FILTERS.

Increases of general level of about 10 db are possible, and while the character of the speech is changed and background noises must be eliminated in the shack, the DX quality of the signal is excellent.

The method outlined by these gentlemen is shown in the block diagram of Fig. 1. The clipping takes place at 9 Mc., so all the harmonics generated are at 18 Mc. and above. To get rid of these and any other undesired products, they pass the output through another 9 Mc. crystal filter of the same type, and "hey presto" a clean clipped signal goes forth through the exciter.

I have experimented along these lines by passing the output of the old faithful phasing generator into the clipper (back-to-back silicon diodes) and then filtering the result through the McCoy filter, using the McCoy carrier crystal in the phasing exciter, of course. Signals from the lonesome 6146 in the exciter, were reported in W8 to be as readable as the original unclipped signal from the linear amplifier, but a few points down on the S meter. Comments on the changed "character" of the voice were "swallowed," and the system put aside, as my linear will handle peaks, but is powered by an

attack with the side-cutting pliers. For these cases, the outboard clipper/compressor is the answer, and Fig. 2 shows how this can be achieved using all audio type components and filters.

These filters are quite elementary types and about three sections designed according to the data in Terman or the Handbook, using ferrite "potcores," will be quite cheap and easy, requiring an audio oscillator and oscilloscope only, for the project. Clipping by the paralleled back-to-back silicon diodes is a preferred method, as this "rounds over" the tops of the voltage peaks, and can reduce 2 volt peaks to something of the order of 0.5 to 0.6 volt.

The system lends itself to the use of cheap audio transistors for amplifiers and balanced modulators, and there are plenty of 600 ohm push-pull to push-pull transformers available for this class of circuit.

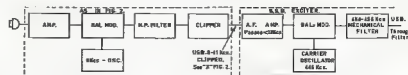


FIG. 3. REPLACEMENT COMPRESSOR USING DISPLACED CARRIER OSCILLATOR.

Sub Editor D. GRANTLEY, W1A-12022
P.O. Box 22, Penrith, N.S.W.

Much has been written in the past on the subject of sending out s.w.l. reports, yet the further we go into the hobby, the more we learn. An overseas DXer, who has been HMBSD, writing to my colleague, Bernard Hughes, of the I.S.W.L. Council, mentions that many QSLs from listeners and Amateurs alike, who have done in Europe. He mentions that many countries and Amateurs, including a large percentage of Ws, show the numerical month in the first part of the group, thus 6/5/67 would be the 5th of June. A card sent to them showing 6/5/67, when checked against the report for 5th June, would be returned unconfirmed, and immediately the DX station is branded as a pirate. The suggestion from HMBSD therefore is, at all times write the name of the month and your confirmations may grow.

V.K.F. QSLs

The VKs V.h.f. Group have asked that where possible, s.w.l.s send reports of any loggings on 30 and over to the individual operator. These reports are valuable to members of the Group and will be QSL'd. However, we must realise that reports from the country and distant areas are widely scattered, and it is not always possible to get many of us have 3 and 8 metre gear and would be willing to assist our colleagues from the V.h.f. Group in their current series of checks.

VK1 GROUP NEWS

The April meeting of the VK1 listeners' group was held at the Wireless Institute Centre with 10 members were present. The speaker for this occasion was Peter Carter, President of the V.h.f. Group. Elections of the year remain, and group-bearers was again held over due to lack of nominations.

At the time of writing, no QSLs are at hand in the B.W.I. Bureau for members of the group. Reports from VK1 members for inclusion in the Bulletin or "A.R." will be welcome, the former to our publicity officer, Mac Hillard, Flat 4, 7 Fletcher St., Camperdown, or to myself at Box 232, Penrith, where the phone is Penrith 50660 and if not there, I will be at home, Maclebrook 6990.

OYERSSA CLUBS

Following last month's rundown on the S.W.L. I would like to present to you the Newark News Radio Club. This is possibly the oldest and best known of all the clubs and for an annual subscription of five U.S. dollars, one has access to one of the best News-sheets and facilities offered to all sections of the communication field. For full information contact the Secretary at 315 Market St., Newark, N.J. 07101, U.S.A.

There is a reason behind the mention of some of the overseas clubs first, as it is not always clear that W.I.s do not exist for anything outside Amateur activities, and we often have members who are basically interested in commercial use in fairness to them, I am presenting the non-amateur clubs to be considered.

AROUND THE SHACKS

Mac Hillard, now publicity officer for the VK2 group, still finds time for some listening. Mac's Collins is probably one of the best receivers to be in the hands of an s.w.l.

Not very often do we have the chance to welcome a newcomer to these columns, and it is with much pleasure that on behalf of the s.w.l.s I would like to say hello to Nick Botly, of Roma, Qld., W1A-LA183. Quite a few queries on the subject of QSLing were answered and I trust that we hear more of him on the DX side of things.

Berry Snell, W1A-L316, has been a regular contributor to these pages over the past months and it is with much regret that we have to say cheerful to him for a while, for by the time you read this he should be in Vietnam.

Eric W1A-L342 has just returned from a holiday into VK2. His inward QSLs to hand at the time of leaving were EA9P, EA9Q, HC1CV, QZ3DD, PA0FAK, URAV, VKNK/LB, VR4CR, 4X4LS, 6VIMX. His outward cards for Jan Feb were totalled at \$21. Finally his outgoing on 16 Mc. c.w. were 45TDA, LAG/M, P08HQ, VPTDX, VYFID, PK1OW QSL via P1OW, CH5UW/MM, VY1AD, COJJB, EPHIN, HRA, VPRBY, SVOWLL and M0VQ. Outward on 40 mc c.w. there is still a wealth of DX,

as shown by Eric's extracts: VE4YZ, OK1OK, XE55, VE2AU, VE7LB, GEP, G8L, VE6AP, VO1FS, VE3ER, VK3BW, and VETIA. And if you think that is good DX for 40, have a look at some of his loggings on 80 L1MKZ, HA8CB, DL3EZ, UA1KAN, YU1UL, UG5CF, UA1KIB, DL6XT, LIQIT, F3CBZ/PC, FMVW, SP7GH, UA4PI, DL1QT, F3CBZ/PC, FMVW, SP7AD, DM4X.

Alan Raftery, W1A-L505, submits the following list of loggings on 30 s.b.: SM2CZ, DL0RM, HX4AL, VU1TU, DA1DZ, VBRG, YN1LB, AMSA (anybody know the QSL address of this guy?), VE7VP and many of the regular Europeans. His QSLs of recent date are: G1DY, WBRZ, VK0KX, VK0XV, VE3JSH, VP0BU, DJ81 and G21FR.

Eric Luff has received QSLs from VQ4X, VE7PT, DL4N, W8PFW, U4CZ, X4TTP, P4CHRO DJ3YC, ZS401, YN5CF, VZ4S, VZ4VA/2, VY3AL, VY3AK, VK2MR, PJ-SCR and WBLXU Loggings were EL4D, JT-1KCA, VZ0X, TFWER, ZL41A, VT-38AN and ZF2H.

New QSLs here include G3FJN, TX0AP, CP3AY and WAT8LV, the CP3 being a new country.

DX NEWS

The following can be QSL'd via the I.S.W.L. bureau in London: G5VFN, W0EQ, XH38J, VE1ACE, KIOTA, G13VW, W8WBU and W8-2GM DL4WE and DJTXX, who were both active from San Marino in the early part of the year, will QSL from their home calls. AP8B has informed Stew Foster, DX reporter for Monitor, that no Amateur activity has been permitted since May 1965, thus AP3AC and AP3CR must be pirates. VSHVRH, who was active from Kure Maria in January, will answer all QSLs from listeners, particularly if they include a list of some additional calls that he was working around the time shown in the particular report.

EA9EJ is reported on 2110 using a.m., at times between 1900 and 1902. ST3BA is legal. W4KVP/2, 3508 Branch Pike, Cincinnati, N.J. 06077, U.S.A., QSLs via the I.S.W.L. SAV, MP4BD, VP3AR, VU2RM, 45TWP, 5R4AN and 6N1MM. The following are pirates at the time of writing: AP4T 171, DL12L, SV0EB and VK0RS, 55B is normally a difficult QSL, and with 5R4AU, B.P. 437 Tannanville, Malaysia Republic, and 5R4AN whose manager is given above, you may have a better chance.

VA1P, Fred Vogel, U.S.A.I.D. A.P.O. New York, N.Y. 06668, U.S.A. TX0AP is a good guy for QSLs QSL to Box 414, Alger, Algeria Republic.

DL4B, QSL via M5SMC; VR30, QSL via K0JUV, K0JUV, K0JUV, ZL1AJ, QSL via K0JUV, PJ2MI, QSL via VE3ZUW, Y4TNC, QTH Kandahar, QSL via K0R2J ZA1RB reports that the station using call Burnk Denmar was definitely not him, and reminds all DX men that he will give plenty of notices prior to his operation from this eagerly awaited country. PR2L/2 is on Tromsø for a year's operation, 14100, 14114 and 14120 are his frequencies. VQ6RF has informed the I.S.W.L. that he does not reply to s.w.l. reports.

QSL LADDER

As promised, here is the ladder brought up to date. It contains the names of listeners only and all who have made no contact with us for the past three months have been deleted. To qualify for a position on the ladder you must be an s.w.l. and have a minimum of ten countries confirmed. Just supply to the address at the top of this page your name, listener's number, number of countries, heard, number confirmed, number of zones confirmed, and number of American States confirmed. If further notification is received within three months your name will be deleted. The only exception will be anybody who has been called up for National Service.

Name	Confirmed	Heard	Zones	States
E. Treblecock	283	296	40	86
P. Drew	187	195	35	41
D. Grantley	161	303	39	35
W. Smith	154	218	38	7
E. Luff	137	215	38	38
M. Hillard	120	120	33	14
A. Raftery	78	194	31	13
B. Macintosh	60	102	30	6

AWARDS

I must again mention through these pages that the only official award, sponsored by the I.S.W.L. is the I.S.W.L. D.X.C.C. The H.A.V.K., sponsored at the same time, is for overseas listeners only. The regular A.I.R.L. awards such as H.A.C., H.A.S., H.A.C., etc., are not issued by that body to s.w.l.s, but their equivalent is available to members of the I.S.W.L., and possibly by some of the "private" American clubs.

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1967 John Moyle Memorial National Field Day Results

SIX-HOUR DIVISION

Section (a) — Call Sign	Score	Contacts	Power	Equipment
VK1AS/P	398	53	20w.	Fully transistorised Mobicar rx, h.b. tx, inverted vee.
VK2AWW/P	518	79		Swan 240, G5RV.
VK2RJ/P	109	11		Galaxy V., Webster Bandspanner.
VK3LC/P	186	24		Galaxy
VK3JO/P	101	11	8w.	Type 3 Mk. 2.
VK5MZ/P	89	11	11w.	Type 3 Mk. 2.
Section (b) —				
VK2YB/P	133	22	16w.	ATR2B, Windom
VK2AGL/P	104	15	7w.	122, G5RV.
VK2JM/P	97	17	18w.	Command rx, tx.
Section (c) —				
VK3HE/P	155	23	5w.	Type 3 Mk. 2.
VK4UU/P	19	4	15w.	No. 19.
Section (d) —				
VK3YS/P	507	79		FT100, G5RV, f.m. carphone.
VK4PJ/P	389	53		Galaxy V. g.p. dip.
VK5LZ/P	606	71		H.b. tx, Galaxy V., inverted vee, doublet.
Section (e) —				
VK3QV	200	16	180w.	75A2, K.W. "Viceroy," G5RV.
VK3EZ	140	11	50w.	H.b. tx, BC453.
VK5RI	115	6	120w.	Viking Valiant, Eddystone, EH12.
VK7RM	435	29		Galaxy V., dipole.
Section (f) —				
W1A-L4144	390	26		HE30.
W1A-L4205	280	19		Home-built.
W1A-L4182	185	11		Commercial.

24-HOUR DIVISION

Section (a) — Call Sign	Score	Contacts	Power	Equipment
VK1VP/P	90	8	50w.	Home-built.
VK3WK/P	752	112		Marauder HX10, Heath SB300, and G5RV.
Section (b) — VK5ZF/P	561	64	10w.	Home-built rx, tx.
Section (c) — Nil Entry.				
Section (d) —				
VK2AAH/P	3786	682		
VK3RN/P	2621	467		
VK3VK/P	1432	247		
VK3ANU/P	1265	222		
VK5LZ/P	2094	286		
VK6VF/P	230	30		
VK9XI/P	1019	175		
Section (e) —				
VK1DA	215	14		
VK2AEC	300	22		Home-built tx, rx.
VK3XB	665	53		32S3, 75S3, and dips.
VK3ANG	475	41		G22TR, Eddystone 886A.
VK3KS	245	20		32S3, 75S3.
VK3GK	108	13		Home-built.
Section (f) —				
W1A-L2022	450	38		Philips No. 4 and long wire.
W1A-L2023	230	19		7-tube super and long wire.
P. Forbes	770	59		AR7.
W1A-L3042	555	45		Trio 9R4J and long wire.
J. Ross	845	47		National T100.
W1A-L5065	435	31		Eddystone S640.

coupled to inverted vee up 45 feet; on 7, 14, 21, 52 and 144 Mc. respectively, they had FL200B/FL1000, FR100B and inverted vee; Swan 350, TA33 junior, FL100B-FR100B, single band 2 element quad; home-built 90w. a.m. tx., three-tube converter to Eddystone 750, 4 element beam up 20 ft.; and the same again on 144 Mc. a.m. and with an A.W.A. Carphone on 144 Mc. f.m. Another commendable effort.

VK3VK/P: All bands from 1.8 to 432 Mc. used and 12 operators. Equipment used consisted of FL100, FR100, FL200, FR700, Swan 350, Heathkit rx and tx, and mostly home-built on v.h.f. Antennae ranged from dipoles, G5RV, 10 element Yagi and 5/5 on 2 metres, 3 element on 6 mtr, to 15 element on 432 Mc.

VK3ANU/P operated on 3.5, 7, 14, 52 and 144 Mc. using home-built tx's on low bands and Pye, A.W.A. Carphones on v.h.f. Receivers used were home-built 18 tube rx on 14 Mc. HE30, EIL rx, with dipoles and beams.

VK5LZ/P had 10 operators, used 3.5, 7, 14, 21, 52 and 144 Mc., and used a Galaxy 5, home-built tx on 40 and 80, home-built tx on 6 mtr, and a modified Pye on 2 mtr. Aerials used included inverted vee, doublet, 3 element Yagi and a 3 element Yagi.

VK6VF/P had a Collins KWM2, Central Electronics 20A with Drake 2B, and a T.C.A. 1649 on 6 mtr. Four operators did the job of representing VK6.

VK9XI/P, our "Island Country Cousins," were really mobile! Operating was done on an articulated Labour Transporter with aerial on roof by VK9DR and VK9MV. Equipment used: FL200B tx with HQ170A rx into a three band beer can ground plane with 14 Mc beer cans, and 21 and 28 Mc. as vertical wires. (No mention was made whether they emptied the cans before or after the contest.) They also had a 12 kw. diesel alternator, festoon lighting system, two refrigerators, fan and power points for cooking! (I always thought that there was an element of "roughing" it on field days, but it seems that VK9XI did it in a luxurious manner.)

VK1AS/P ran a fully transistorised mobile station at Broulee, N.S.W., using Heathkit Mobicar transistor rx, homebrew all transistor tx running 20 watts input to the final. Rig used 19 transistors, 4 diodes, 2 zener diodes. Powered from 2 motor cycle batteries to give 12 volts. Maximum current on voice peaks was 2.4 amps, quiescent current 0.4 amp., standby current nil. Antenna was inverted vee at 25 ft. This score, he claims, should have been higher, but he had to open oysters for lunch!

VK5MZ/P said, "Good fun, but damned hot and 'mossies' terrible."

Finally, **VK5ZF/P** still says that G.M.T. for a VK Contest is unnecessary and protests once again—but thanks us for running the Contest.

Hope to see you all again next year, Neil Penfold, VK6ZDK, for Federal Contest Committee.

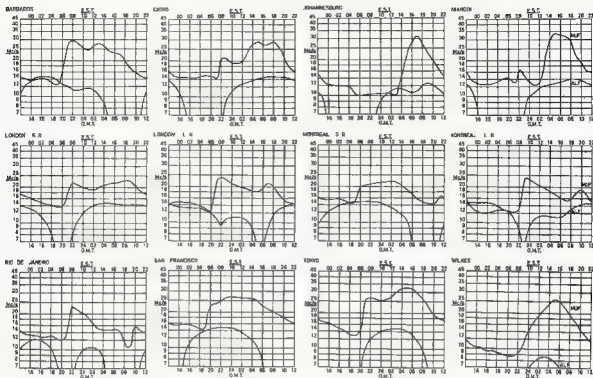
Above is the list of results of the John Moyle Field Day conducted last February. Winners are listed in heavy type. As may be seen, the entry list is rather small, but nevertheless, the activity of the portable stations is commendable. The multi-op. stations succeeded in scoring high; this no doubt brought about by the ability to work all bands and having a large number of operators and assistants.

Some points of interest from the logs:

VK2AAH/P: All-band operation from 3.5 to 144 Mc.; seven operators and an extremely well laid out log per VK2SG (thanks Syd).

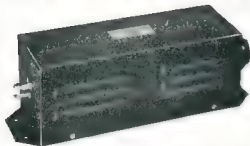
VK3RN/P: All bands from 3.5 to 144 Mc. were used by 11 operators and four assistants. Equipment list reads like a radio store; on 3.5 Mc.—home-built tx, 25 watts to 2E26, and Eddystone 750

PREDICTION CHARTS FOR JUNE 1967



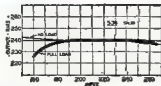
(Prediction Charts by courtesy of Ionospheric Prediction Service)

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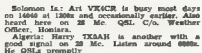


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LM39



Solomon Is.: Ari VK4CR is busy most days on 1440 at 1200x and occasionally earlier. Also heard here on 28 Mc. QSL C/o. Weather Officer, Honiara.

Algeria: Harry TX5AH is another with a good signal on 28 Mc. Listen around 0800x. He QSLs promptly.

Ken VKSTL pleads pressure of work for his lack of activity this month. However, short as the list might be, it is choice and select. ¹ GBSHM GBSSE ² on the big dog or a p. he worked ³ JXKVC ILLC ⁴ JERDQ

ITAA LAFLE PABCN PJSCV VELARY ⁵ ELI,
VPBRS KANHW VY3 QMSA QUNTU STBKC
SWIAT Bstl QSLs received were SLAAX,
HSIAK HSIAX, 4X4UL, ODLSX KCBWV,
EPZAM KQOXV CDE VOIAX VKBCR, GD-
SIA PJSCV VRSTC LXIXC, SNIBO, SZAJH,
GX3PS, SWBBB, VPZGLE.

Dud VK4MY with his beam lowered to 30 ft as precautions against cyclonic weather off the Gold Coast worked this nice lot on A.S.B. c w XWBSC 14116 ZSTU 1418 ZSTU 1425 ZSMTA 28590 ZSAOI 28590 NJDZT 2855 KML 4KIL 28590 VUZDKZT 14166 KFMJRM 28590 GRBSM 14150 4DUITTU 14122 1GRB 16100 1SLAG 14135 8MZPZO 28588 UWVST 14143 PADDEC 14188 9VPFF 28590 1SCWXX 14100 VEIJK 14115 VHYBC 14132 ZSJIKJ 28588 ODBFC 14670 WRH-6GPD 21106 ZLSAC 14156 HMICB 21037 GSWGY 14088 Mostly between 0750 and 1300.

Henry KYHA in Darwin, who says the west is in a move, and conditions improving overall. Some of his QSOs and activities are as follows:

On 21 Mar c w OHNL PAOL, UPOL is (Ind. Pole). ZEJX, FR721 MM, LAIK, G12TL, CEZEW KTFPU KHE URIDZ, P8OP, KYACI, ZBZAM LAJCR OZAFF 9J2H, On 25 PA-DE, DL8PU, HB9XG USUK OHIT, Q20GQ/ UGVCV. On 26 Mar, On 26 Mar has improved since March and these past few weeks has managed SV0NU, ZDMM, ZDSO, XEIKCV, X3PJS, SPTXK, PJBCZ, FUAAG, 3CJAYX, PYTJ, CT3AS, DUHFM, VASAP and all w

David VK3QV reports good conditions on 30 Mc. In fact he predicts it will turn out better than the 1800-Kz area. He has erected a wide range of 30 Mc. beams, strapping them down. Some of his recent QSOs are: CRNDX, CRTDS, CTIBB, PKRAC, HLA7G, HKIKS, KLTWAM, WPTVT/KL1, KPAAST, KWEEJ, MP47T6, OR-5XXC, OHIVA, OHTI, OHSSN, SMSBP1, SA-9AHN, UASWD, UAULXU, UPFACH, VETBOS, ZK6AK, ZK6AL, ZK6AN, ZK6AR, ZK6AT, ZK6BI, ZK6BO1, ZSNTH, ZCUVS, ZCAIAE, ZCJJZ/ZU, ZK6AH, NZSIE, NZWRW, NZMPO, NZALO, SVFTY, KEIKKY, ZC4CM plus many more Z3 areas, also all W, ZL and Z prefixes, etc. All s.a.b. (Really a super list OM and welcome back to the

Chas VK4UC, a regular voice from the Peninsula, reports 14 Mc. as good between 0600 and 0700. He has added 5.k.h. to his activity and worked PR7LZ at 14.1 Mc. PB7B 73500. F08BU G8TKT TLQKQ ZE4US 5W1AA CM2BL 1Q7EC EL2D BV2A, CR4BC, H1EJQ, H5AKK, KC0CL, KJ6E2, Z860Y, Z890A, 5817X 4M5A, LX1WR YN1LH, CT1PK, OX3KM G82SM CT1CI as on, and on Al mode: O3BYL, ZE4VJ BV2A, 8M4I, VQ3CC, CT1CB, 8M4I, CT1CB, CT1CB, CT1CB, CT1CB, reports machinery, KPNY CM3BY 73500. He reports 14.1 Mc. 5,000 odd DX 5000 in 10000 yards and says he's dressing his feet!!!!

Jeff VK8C supplies info on the WA8SD DX-pedition. Equipment to be used is a Swan 500 with ext. v.f.e., 3 el. for 30-10, 14AVS for 80-40. The vessel is 35 ft. Trimaran, the "Antipodes". Jeff says that QSLs can be sent via K4VZA, Walter Manning, 2408 Homestead Dr., San Diego, 92114. When working the expedition, listen as directed. (Tks OM, more when you have it.)

Merv VK6OV from North Queensland reports conditions good on 22, 15 and 16. He lists prefixes worked from all continents such as GW, GM, YA, EP, VU, TG, EA, LU, VP, ZP, SNMM, ETUSA. (Thx. OH, pos give full calls and times next time.—AL)

Peter VK6PJ says 20 mix is good on the a.g.

To Europe at 2000z and VE, W workable at good strength from 0800z. On 15 m Europe at 1000 and later is workable. Ten has faded off somewhat but Africans can be QSO'd round 0700z. He lists these good ones as QSO'd's:

14 Mc s.s.b., VOICR, EA3JE, GK5 F2N1, OH1XB UW5ZF GR1UN UA3KBO F2K1, F2HDZ EATHN GW3AX SM5AA, OX4PM, CX-3BBD F5CS HBA9V KBECZ OA4SO, HX-5XMT V50MB plus lots Europeans. On ten, UC3AA GW3MFF DLS9F D5JJK, Z5MRU, F5V3 UP5UR F3H SM5CT UW3AD, DU-5VQ Z5MAT plus lots SM5CT.

Reg VK4VX hands in an excellent 20 mx DX list, but also says he has worked some 80 countries on 10 these past few weeks. What an excellent achievement and it augurs well for activity on this latter band next spring and summer. On 14 a.s.b. CTBT CR6C, CBA, CN6CZ, CR6S, CR6QO, DLRC, DUTSV

EL25 EASNI, EPTHQ, F3BV, FGXL, GKGB,
HIXRM, HB5VW, ISPE, NITRA, JTKAA,
LUTMR, LXIWR, OXGWX, PJCC, SPFH,
SMAIG, UREKAN, VPRS, VPIL, VPRG,
VSM8 XEYL, VGTC, YOM8, YVZR,
YNIHSM VKIAM, ZFIRD, ZSIFRP, ZSL,
SWIAA, SNEAJ, BGKLT, BGQSP, LAITW,
3IRID, TXGAX (Congrats) on your 15 miz
achievement. Wag OB--All.)

ZFIR - KRLG
VQAK - VQAD (QSL manager for VQO).
YSGG - VEAXN
VRIC ZLZNS
W9LJC KM6 KMGCE
WAAZDZ/KPS - KSUUV, 4835 Regale Rd., Wood-
land Hills, #1894.
KM6BI - WAKCX
QSO'd and QTHs supplied by VK4DV.
DUOR - WCTNT
FBSWW K2MGE
STERA Box 244, Pt. Sudan, Sudan
1WECZ - Box 1025, Castro Valley, Cal. 94606.
VPRQ and VPSQ - CXLAM
VP2MK - W4LWR
AP5NO - DJ3KM

12FRC-111T

—By courtesy of Fla. DX'er.

TL1QQ-W4DQS
ZE4JS-W3HNK
5W1AA-Box 486, Apia.
CM3BL-DK1GL
TQ7EC-W5GIQ
EL1D-K4JKO
BV1A-Box 101, Taipei.
VR1L-K4PKY
CM4BC-Box 36, St Vincent.
VM1LB-Box 10, St Vincent.

Last month's meeting was made of a booklet produced by QRP Area Co-ordinator, Barry VK3BE. Seems I did not have the full info on this. The following is the amended version of the booklet. The booklet is available from the Branch of QRP International has issued a functional booklet entitled 'Country Check List', which incorporates all prefixes, U.S. States and possessions. It also contains a list of contacts as a self-contained log for DXCC, WPX, WAF, WAS, etc. with provision for logging QSO and QSLs.

It is necessary to work three N.Z. and nine Aust. members of the club. Club freqs. are 3940, 7040, 14080, 21040 and 28940 kc. for c.w.; 3855, 7090, 14290, 21200 and 28940 kc. for s.w. Forward list of club contacts to VK3BE is Cornish, Glenis, Norman, S.A.

Members in this area are: ZLs IARY, IAYG, IATY, ZLs SAJ, SDY, HDY, ZLs HG, HZ, SQR, IRL, SNC, TYU, ZLs AKW, HZ, AUC, AAF, SSR, SRB, TGV, TYU, ZLs TRG.

The Polar Bears Radio Club issues this award to any Amateur for contact with different prefixes in zone 14. Three classes are available: Class 1 for 100 prefixes, Class 2 for 75 prefixes, and Class 3 for 50 prefixes. Endorsement will be made for all contacts on a single band or in any single emission type.

The countries of zone 14 are: SM, LA, OZ, OY, C, GV, GD, GI, GM, GW, PA, DJ/DL/DM, ON, F, LX, HB, HE, JAS, ET, EAS, CTL, EBA, ET, PK, (U) (HB)/PL counts as HE, but C93, GB, SL, LJ, PL, etc., are valid for this award.)

A charge of five L.R.C. is made for the costs. Applications (QSLs not required if the list has been checked by another Amateur) should be sent to P.B.R.C. c/o Sven Elfving, Solgardagatan 15, Örn Skoldsvik, Sweden.

These past few weeks queries have come from the three Eastern VK States as to the source of a metallic, clicking type interference, strongest on 21 Mc. The S.M.C. Vigilance Station in VK4 confirmed this interference, reporting its source as roughly north of New Guinea apparently? When loudert, it QRM's commercial teletype circuits. This direction is verified by the Hams who have turned their beams.

Sometimes the clicking is regular at about 1 second intervals, but varies to a warbling rhythm like effect many times a second. Its bandwidth is not constant and sometimes covers 12 to 30 Mc. It has been suggested that a satellite is the possible culprit, however some days it is absent and other times strong all through the daylight hours. I'm quite sure the P.M.G. would welcome any clarifying info on it.

My thanks to all those who have taken the time and trouble to help the column along. Come on the air if you can as there is plenty of DX available. 73. Al VK4SS

The sunspot number for June is given at 79. This represents a steady increase during the past month and may help to maintain activity on 14 and 31 Mc during the winter months. However, 28 Mc already shows signs of being on the skirts until next spring. 40 mX has W and J signals on it till midnight, then it becomes a mass of various types of QRM. Someone with poetic aptitude should write an epilogue on the demise of DX on this band.

Monteria Vlad, whose back home call is UA1CK, will be signing T1JTJ during May and June. Freq. is 14180 and listening as directed. QSL VETZM with e.s.s.e. **L1DXA**. Kerguelen **FBXX** should be on s.s.b. by end of May with 10, 15 and 20 mc operation. **L1DXA**

WAS980 Round the World DX-pedition: Bill kicks off from Clipperton on May 1. Then will follow Coos and Malpelo. He would like the following made clear:

1. Major contributors will receive cards direct
2. S.A.B. and c.w. activity on all bands
3. One QSO per band per mode.
4. Contributors will be notified of all his plans if they supply S.A.B.
5. Rubber stamping of non contributors' cards may be necessary Further info from

Oceans. All these chaps are active as of now. Maybe you need one or two. KGLI Volcan 14330, KPGB Palmyra 21030, WJ 622Z, KP6 Palmyra 14315, KCSW Eastern Caroline 14110, KWDS Wake 31050, KXSR Kwajalein 14000, KGSV American Samoa 14318, KJXZ Johnston is 14300. (By courtesy ELAFZ, DC Sc "Break-in")

Myself and Mr. ELAI has been inactive for three years because of trouble. However, boatloggers have kept his call active on 1 and 21 Mc Neil operates on a.m. 14300, usually from 0600Z

Alaska: KL7GCB, Near Is., 14335 0030s, and KL7FRY from Shemya in the Semichl Is. group. Several others are active and workable.

Swan is K84CC is reported active 1603Z
2110 and 28075 1960. QSL to P.O. Box 1148.

North Pole Expedition VEYL is on 16
c.w./s.a.b. at 0300s daily QSL WOQUV
Pacific Trust Territories KG6IF Marcus 14220
KG6SL Marianas also KG6SM 21375. AD
around 0800z. (ZL1AFZ)

Kure is KHEEDY 14235 0000z. 23075 0000z.
QSL USCG Loran Stn., Box 36, P.O.,
Frisco, California 90040. (ZL2AFZ)
Shetlands VPLUF on daily 14020 0000z. (ZL-

Also judging by reports it appears that ZL-
JAC is QRV on both cw and s.s.b. if Mc.
Trome n is FRIZL/T at present is active

from here on 14000 at 1330z
Caucus Is. VP5AB is active as of now on
14332, 14120 at 0730z. QSL WIWQC Length
of operation not known. G3UGT.

Falkland Is. VPSFL on duty 1412Z. Says he will not work in p.le ups. (GJUC) G3-MMM is QSL manager unofficially
South Orkney Is. VPMJD on c.w 1400Z at

Rio de Oro Justo is now very busy with
n.s.b. 14120 2000x. Reported working mostly
Ws on 142.0. G3UQT
Cesar Keeling ZCWT was reported active

Cocos Keeling ZULF was reported active, now it is claimed he is a bootlegger KRAHN who was named as his QSL manager says he is being swamped by legitimate QSL requests Western Samoa SWIAZ is QRT and SWIAZ

Western Samoa SW12Z is QRI and SW1AA is now the only station active from here. Is heard on 14030 a.m. xtal controlled, but has several other frequencies. Try around 0800Z. JVN:ATC

Turkey: TAJAC still said to be QRV, also
s.s.b. activity on 14200x at 0415. QSL for the
former goes to K4AMC
Rwanda Several are active from here on

Awarded several are active from here on most bands. A few are **WXLH 21970** at 1630z, **QSL** via **DLIZK**, **WXSOG 21200** and **14 Mc 2000z**, **QSL** **WIGHK**. **QSL** manager, **Stu WIGHK**, also has logs for **FUNTD**, **EXOPS** on **14 c.w.**

Zambia 9/15BC seems to be a regular on 28 Mc. around 8700z. One or two others are active on this band.



News has been received about our Supervisor, Mr. Rex Black, who, after enjoying a very pleasant voyage to Italy, was struck down in Naples by a virus but has now recovered. Rex was very pleased to have an unexpected revival QSO with Harry Major from Victoria—another very active Y.R.S. member. As I hear it, Rex and Harry were walking down the same street in London, I believe, when Rex spotted Harry's W.L.N. lapel pin. After catching up with him, you can imagine their mutual surprise when they discovered they knew each other through correspondence and a long association with Y.R.S.

The first copy of the Y.R.S. Newsletter for Supervisors and Club Leaders has been received from the new Editor, Roger Davis, VKIRD. This is full of details on where to obtain information and a short explanation of the various jobs assigned to individuals. With regard to the Postal Groups, it is rather disappointing to see that the total number has been reduced to three in New South Wales. There are many boys who could benefit from this service if the leaders were there and therefore, any offers will be appreciated. All you need do is contact Roger Davis, VKIRD, Postal Group Supervisor. Actually the job is quite simple and is completed by the Club Leader who has to be present on regular days each month. So anyone with an interest in young people could be of help in promoting this hobby of radio and filling a gap in the Y.R.S.

I have some news from Bert Rolleston, VK2EQ, who advises that the Port Pirie Youth Radio Club has a new A.O.L.C.P.—Graham Johnston, VK2GJ. The Port Pirie Club has a very interesting program of correspondence Certificates, three Juniors, and two A.O.L.C.P.s. It seems their system of multiple choice questions is paying off very well. I found about the younger boys doing the Elementary gave a better account of their knowledge with this system. As the certificates progress the number of multiple choice questions is reduced in order to properly prepare the students for the written P.M.G. exam.

VK3ZTT is the call sign for the A.P.I. Radio Club at the P.M.G. Technicians School, Vic., and is active on Monday, Wednesday, and Friday of each week from 0200-0300 G.M.T. There are some 30 members in the club which is run by Tony King, VK3ZUA; Bob Whalley, VK3ZWB; Dave Buck, VK3ZXC; and Don Reid—all instructors at the school.

Recently a group of boys were heard bawling the air from VK3WI, Dural, on 146 Mc. They were working up some contacts for their radio telephony certificates and getting some very good experience.

Eric Gauls, Canberra Youth Radio Club, has received his Junior Certificate with Honours.

There are many very active clubs in Y.R.S. and I would like to receive a bit of information about them—membership, activities, club station, facilities, etc.

The Canberra Youth Radio Club is a good example of a small club—membership of 17—which concentrates on the Youth Radio Scheme. Roger Davis, VKIRD, is the leader in the case and they have Elementary and Junior Certificate lectures and several older boys nearing the A.O.C.P. standard. The boys are keen, bring their own tools, and the club is growing. They have even started a library. There is a charge of \$1.00 which covers printed notes, certificates, etc.

VK3ATZ is the call sign for the Hunter Branch of the W.I.A. which started operations in May 1964 in an old church building in Teresita with 35 members. With plenty of elbow grease and music power, the club now has an office, store, canteen, workshop, tea shack and a main hall for lectures and Morse classes. The membership now stands at 50, but fluctuates a little. The club can operate on 180, 80, 40, 15 and 2 metres.

Classes are held on Wednesday evening and Saturday afternoon with Wednesday reserved for those working for the A.O.C.P. and Saturdays for hobbists and Y.R.S. interests. Notes of all lecturers are available and there are also

notes for the Junior and Elementary Certificates available. Workshop facilities are available whenever the club is open and there is also a library with a good selection of technical books and magazines. This club handles the Junior Certificate arrangements, setting and marking examinations, etc.

One of the difficulties with people is that very often they work very hard for others and are so modest that they often do not realise their own worth. If you know of anyone like this, perhaps you could get a few details and send them to me as this publicity is to help Y.R.S. and the more we know about it the better.

I will end my notes with the usual request for news. To date I have not heard from VK7 or VK6, so perhaps this can be rectified shortly. Please send all news to me by the last Wednesday of each month. The address is Mrs. M. Swinton, VK3AXS, P.O. Box 1, Kuluvara, N.S.W. 73, Mona.

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NEW CALL SIGNS

FEBRUARY, 1967

- VK3ASZ—K L. Lear, 179 Rusden Rd., Blaxland.
- VK3BRJ—R H. James, 34 William St., Hornaby.
- VK3BWJ—W J. Hanley, 54 Carinya Ave.,
- VK3ZUC—R L. Carpenter, 134 Medical St.,
Speers Point.
- VK3JW—W. Martin, Station: Bulmanwell
Rd., W-y-Yong, via Bairnsdale, Postal
P.O. Box 239, Bairnsdale.
- VK3ANE—Youth Radio Clubs (Vic. Division),
Station 355 O'Hara Rd., Pascoe Vale,
Postal, C/o H. W. Rider, 232 Cumberland
Rd., Pascoe Vale.
- VK3AOC—Hamilton and Alexandra
Colleges Investigators Science Club,
"Myalong," Kent Rd., Hamilton.
- VK3AOV—V. E. Squires, 1 Tennyson Ave.,
Killybeg.
- VK3ATG—J. W. E. Edmonds, Station: Portlaine,
Postal: 66 Baden Powell Dr., Frankston.
- VK3AUR—R. F. Lloyd, 171 Cheddar Rd. West,
Keon Park.
- VK3AUC—P. D. Carter, 11 Prince's Ave., Tra-
salgar.
- VK3AXS—Smith, Unit 4, 6 Patty St., Men-
tione.
- VK3ZBJ—G L. C. Jenkins, 22 Miranda Ave.,
Carrum.
- VK3ZCB—R. K. Constable, 84 City View Rd.,
North Balwyn.
- VK3ZPG—D. P. Porter, 5 Flora St., Bayswater.
- VK3ZQK—D. W. Malwood, Portland Rd., Hey-
wood.
- VK3ZQS—P. J. Blackpole, 34 Service St.,
Manly.
- VK3ZSE—M. Bellaart, 35 Cox Rd., Norlane,
Geelong.
- VK3ZSL—L. Osborn, "Stonecroft," Splitrock
Rd., Upper Beaconsfield.
- VK3ZUC—R. W. Walker, Asher Rd., Leopold.
- VK3ZUE—R. J. Jennings, 11 Dunbar Ave.,
Caipheid.
- VK3ZUP—P. McNeab, 2/131A Woodland St.,
Essendon.
- VK3ZUC—R. M. Cowling, 5 Weddell Rd., North
Geelong.
- VK3ZUR—L. Evans, C/o 85 R.T.C., R.A.A.F.
Base, Leveon.
- VK3ZVA—J. N. Milneholm, 10 Bales St., Mt.
Waverley.
- VK3ZVB—B. F. Lavery, 49 Joy St., Braybrook.
- VK3ZWL—J. A. Locke, 9 Ridgeway Pds.,
Sunshine.
- VK4BL—B. J. Davey, 140 Goodwin St., Curra-
jong, Townsville.
- VK4EN—E. D. Neale, 33 Waterworks Rd., Red
Hill.
- VK4GM—A. F. Jacobson, Station 25 Killickin
Ave., Kenmore, Postal: Box 68A,
G.P.O. Brisbane.
- VKANX—N. Williamson, C/o Peoples Palace,
Sheridon St., Cairns.
- VK4TC—Townsville Amateur Radio Club, Sta-
tion 17 Neelson St., Wulguru, Towns-
ville.
- VK4ZCT—J. C. Grant-Thomson, 26 Coohal St.,
Aspley.
- VK4ZDA—M. D. Adams, 35 Australia Ave.,
Broadbeach.
- VK4ZDR—D. R. McLean, 56 Bell St., Biloela.
- VK4ZZ—R. G. Crawford, Station: Portlaine,
Postal: Radio Section, 10 Squadron,
R.A.A.F. Townsville.
- VK5YL—D. Robertson (Mrs.), "Maroomka,"
Milan Ter, Strirling.
- VK5ZCR—C. E. Rieger, 24 Second Ave., Baiton
Isle.
- VK5ZLC—C. H. Ludewig, 18 Atrill Ave., Ell-
erslie.
- VK5ZOK—N. J. Kennedy, 26 Elizabeth St., Tea
Tree Gully.
- VK6DJ—J. V. Delano, 145 High Rd., Melville.
- VK6ST—J. F. Reid, Carnarvon Motel, Car-
narvon.
- VK6ZGB—L. D. Priestley, 37 Amberly Rd.,
Balga.
- VK6ZGO—P. C. Kloppenburg, 9 Muirick St.,
Innaloo.
- VK6ZGO—G. D. Ong, 50 Milton St., Mt. Haw-
thorn.
- VK8AU—D. Hanner, Batchelor.
- VK8FM—J. S. Maynard, Block 61, Popen-
detta, F.
- VK9WD—W. Delagish, Kundawla Coffee So-
ciety, Kundawla, via Gorka, N.G.
- VK9ZCF—B. M. Chester, C/o D.C.A., Cocoa
Island.

The building bug has hit the locals, efforts range from transistor converters to high power finals and slacked antennas. T3, Mick VK6ZMO

VICTORIA

From reports received from Melbourne Amateurs there is an increase in activity on the 432 Mc. band, and some stations are reported to be trying 435 f.m.

Two metres has seen the usual activity plus a few new stations and the re-appearance of a couple of old hands. In the DX way of things, there have been several reports to Northern VK7 and Eastern VK3, but from reports received from others there could have been many more. This state of affairs could possibly be put down to many large and noisy power leaks we Melbourneans have had to put up with over the past few months.

Six metres has been like two but here the main activity has been on the a.m. net of 53.82 Mc. Here in Melbourne we have a very queer quack who feeds on bird seed and has a very penetrating whistle and a six metre transmitter. No reports have been received of any DX activity in Melbourne but information from other sources suggests that VK3s have been heard on KAS.

The VK3 V.H.f. Group meeting was held on 18th April and some 60 members and visitors heard Graham VK3ZWA (ex VK6ZDB) describe domestic radio control systems as applied to models.

The two metre fox hunts and scrambles still attract the numbers and for fox hunts we have not done down to using 350 milliwatt transmitters and we still find them. T3, Cyril VK3ZCK.

QUEENSLAND

Channel A L.N. is very active between 9000 and 2200 E.A.S.T. with some stations using Channel B to get away from the QRM. Any Amateurs travelling through Glippsland are welcome to call on Channel A and arrange a reply QSO.

David VK6DY was told by a KAS (in Japan) that this month (May) he has heard H4, VK8 VK6 and VK3 on six metres, so he is now building a one kilowatt rig so he can make a two-way QSO.

Active in Glippsland are: David VK6ZGZ, Art VK3KAT, Les VK3ZSS, George VK3ZCC, David VK6ZGZ, George VK3ZCC, George VK3ZWH, Duncan VK3ZQB, George VK3KAD, John VK3AJO, Harry VK3ZX, Allan VK3ZNB, Bert VK3ZSB, and Peter VK3ZGZ. Between them they use a.m. 2, 3 f.m., 2 a.m. and all the h.f. bands. T3, George VK3ZCG

QUEENSLAND

All the April V.H.f. meeting a record attendance was noticed. Peter VK4ZPL flew down from Townsville for the night. Dave VK4DPL gave a summary of Convention matters concerning the Limited Licence. W.I.C.E.N. was also discussed but nothing was finalised.

Fox hunts in Brisbane are now on both six and two metres and are held by the D.C.A. group and not the Military Association as is generally believed. These fox hunts are well attended and have not become drag races as they seem to be in other parts of the State.

The VK4 beacon project is nearing completion and a keyer disc seems to be the main hold up. The intended frequency is 144.5 Mc. The local t.v. station TV9Q provides a link and very active on the 432 Mc. band. As the subjects of projects, the 432 converters being built at the QTH of Roy VK4ZEM are progressing slowly. One of the 432 Mc. stations which can be heard in Brisbane, these are of Bill VK4ZBD, Ken VK4ZB, Alan VK4AI and Roy VK4ZEM.

Six metre activity in Brisbane is declining and the general move is to two metres because of t.v. problems. During April, VK3s were heard in Brisbane but openings were very short and signals very weak. JAs have been worked from Brisbane and northern districts and signals have been quite strong. Alan VK4ZAI is a keen DX man. Openings have generally been during the evenings and due to t.v. must have had to be content to just sit and listen.

Two metres near 50 Mc. in Queensland New radio television was received in Japan recently, also it seems that JAIQY is now on 51.96 Mc. and JAIQY is now on 51.96 Mc. and JAIQY is now on 51.96 Mc. 50.5 Mc. Peter VK4ZPL told me that in Townsville nearly all the Pacific area can be heard on six metres during the evenings, and that Russia is also heard. The VK4ZEM New radio on six metres are John VK4ZFD, Norm VK4NP and John VK4ZB. George VK4ZGZ and Peter VK4ZCP are in the design and construction stages of filter type s.b. exciters.

On two metres, to be "with it" now, it seems that one must have high power or a.s.b. Tom VK4ZL still works the Townsmen chaps with his five watts. Graham VK4ZGZ is still lethal in my area, Lawrie VK4ZBL and Ron VK4ZK have good s.b. on two metres and I doubt either will stop. VK4ZGZ has had a new seven band s.g. converter and Bill VK4ZBD still makes the first r.f. tube glow blue.

On a final note, don't miss the VK4 Convention at Alexandra Headlands on 2nd, 3rd and 4th June—should be quite an affair. T3, Mike VK4ZMW

SOUTH AUSTRALIA

Activity in VKs at the present time is somewhat depressing, however some incentive is currently available with the news of JA activity from VK6. It has been reported to us that EZMOR in Darwin has worked 160 JAs recently and it would appear that the entire complement of six active Amateur stations in that area have really been having a ball. As yet the elusive DX from JA has not resolved this southerly latitude although a report of better success on April 8 at 144 Mc. from Garry BZX may indicate the tide of events to come.

On the 2 metre scene the main source of activity is presently centred on Jim VK3ZBZ at Port Pirie. Through the use of a.s.b. has licked the t.v. situation. In addition, John VK3ZBZ has been heard from the Pirie area.

It has been reported that Mick VK3ZDR and Herb VK3NN are currently conducting daily work on 144 and 432 Mc. to ascertain whether there is any direct relationship between the two bands as inferred by W and V. The claim is that 432 is equivalent to 144 Mc. for long haul communication. They have drawn no conclusions, however Mick VK3ZDR is claiming that 432 is equivalent to 144 Mc. for long haul communication. They have drawn no conclusions, however Mick VK3ZDR is claiming that 432 is equivalent to 144 Mc. for long haul communication.

With respect to the t.v. boys, George VK3GG has last perfected the video signal and is currently trying to get the video signal on the 432 Mc. carrier, 8.3 Mc. away from the video. T3, Colin VK3ZJH

WESTERN AUSTRALIA

The following DX countries have been heard on six metres in the Sunbury area: JA, BV, Korea and plenty of f.m. and video.

13/6/77 RTTY, S-way f.m. t.v. video and Haseo VK6ZGZ, J.A.D.B.

14/6/77 F.m., t.v., S-way f.m.

22/6/77 F.m., t.v. video on exactly 44.5 Mc. with brief pictures.

30/6/77 F.m., t.v. carriers, etc., more DX.

4/6/77: This day was very interesting. I must mention that these signals were from W. I think it could have been from Vietnam. All day American voices were heard and from their conversation it seemed like military trucks (two-way f.m.).

5/6/77 More DX to north, with HILKA Korea, f.m. (commercial) on 49.5. It peaked 6 plus and in some instances one could hear the 432 Mc. band. The signal was on 432P. (Reprinted from the West Australian V.H.f. News Bulletin.)

TASMANIA

Launceston Area: Two Metres—Activity on this band is mainly between 9000 and 1100 E.A.S.T. and at week-ends. Most stations in the Launceston area are able to hear Melbourne stations on the 432 Mc. band two or three nights per week. The Melbourne stations have been called but also no stations have been heard from the Launceston area. Ron VK4ZEM who can be heard most nights, so how about it chaps, try swinging those beams south for a change.

Two Metres—Activity on this band at the moment is low, with the main activity being mobile stations. In the near future there is to be a translator put into service on channel one of the Launceston area. As there could be t.v. problems in the Launceston area. There are stations at the moment building high power mobile gear.

Hobart Area: Two Metres—This band is not very active at the moment, but there are stations who are either building or planning to build a mobile station.

One Metre—This band is the main one in use in the Hobart area. The main frequency used is 33.03 Mc., the a.m. net. with about twenty mobile stations on at the moment. There is a station on the 432 Mc. band. There is Morse practice two or three nights a week on the net at about 2000 hours E.A.S.T. and on the 432 Mc. band at half an hour.

T3, Brian VK3ZB7

Sub-Editor: CYRIL MAUDE VK3ZCK
2 Clarendon St., Avonide Heights, W.2, Vic.

Well, new time again and I would like to think of myself as not writing in their neatly typewritten notes. It will be appreciated that it is much easier to read typewritten notes than those hand written. There is only one request, please leave a margin 1 inch wide on each edge of the paper
T3, Cyril Maude, VK3ZCK

MACQUARIE ISLAND BEACON

The six metre beacon on Macquarie Island is now operating continuously except for a two-hour period between 0530 and 1130 E.A.S.T. daily. The beacon is on 53.825 Mc. with an input power of 25 watts. Signals from the beacon were heard in Melbourne on 16/4/77 at 2200 hours E.A.S.T., and were R3 32 with slow deep SSB.

NEW SOUTH WALES

The April meeting of the V.H.f. and T.V. Group saw a clear change of control. The members of the 1967/68 group committee. Fifteen nominations were placed before the starter. Peter Healy, and it was heartening to see the interest displayed by all present. Elected to office were: Peter VK3ZCP, chairman; Tim VK3ZTM, vice-chairman; Norm VK3ZGZ, secretary; Keith 32 Mc. treasurer; Bob VK3ZGZ, broadcast and publicity; Phil 32PL, contact liaison.

On behalf of the incoming committee and members we extend our thanks to the previous committee for their twelve months of voluntary service.

The new committee held their first meeting three days after the April meeting and decided several matters of policy including the reorganisation of the members comprising the permanent contact committee. The group committee extends an invitation to country members not already members of the group to join up, it only costs a four cent stamp, and at the same time let the committee know of your views and suggestions.

Country or interstate visitors who would like to advise the N.S.W. secretary of their itinerary and operating frequencies will be assured of adequate publicity for their forthcoming visit through the Sunday broadcasts.

The Sunday evening V.H.f. broadcasts, pre-emption permitting, will be radiated on 53.86 Mc. s.m., 53.860 Mc. f.m., 144 Mc. s.m. and s.b., 146 Mc. f.m. and 432 Mc. s.m. A roster of originating stations has been drawn up and will be published in the monthly Bulletin.

The new W.I.C.E.N. net frequency, 53.86 Mc. f.m. has got away to a good start with excellent coverage being reported by the early starters. The 53.86 Mc. a.m. net has also found a new lease of life with the addition of several stations in the Blue Mountains area.

A V.H.f. field day was held at Pittown Active on Sunday, 15th April, and consisted of a morning hunt, hidden fox hunts and pedestrian fox hunts.

The 53 and 144 Mc. fox hunts are held regularly every month and the contact committee is anxious to see just how many in these events. Remember that even s.w.f.s can take part in these events as transmitters are not necessary. T3, Keith VK3ZAU

HUNTER BRANCH

Would all QSL Bureaux please send all QSLs for the Hunter Branch direct to our own QSL manager, Stan VK3AYL, address as per Call Book.

Six Metres This band has been very quiet with Channel 6 being heard at times, but we think it is a bit of a waste. The Bulletin and Sunday morning nets at 1900 hours have been very quiet with VKs 2ZWH, 2ZMO, 2ZJG and 3AJP being the most active stations.

Two Metres Some good contacts have been had with Sydney town during the week 17th-21st, with the 20th being the best. All signals were heard from Sydney. VK3ZEM worked new stations and Gordon almost as many Bill VK3ZWH and others were also heard working the Sydney boys.

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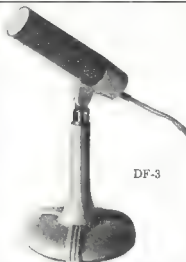
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ELECT. AUST. APR. 1967	All Silicone Playmaster Amplifier	PT6232, Z3262
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ELECT. AUST. OCT. 1966	3 Band Receiver with Switched Coils	PT1992 Suitable Speaker Trans. from A & R Range.
MINI WATT DIGEST AUG./SEPT. 1966	Electronic Photo Cell Circuits	PT5901
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FEDERAL AND DIVISIONAL MONTHLY NEWS REPORTS

(SEND CORRESPONDENCE DIRECT TO DIVISIONAL REPORTER NAMED AT PARA. END)

FEDERAL

FURTHER EQUIPMENT APPROVED

In the December 1966 issue of "A.R." (page 8) is a list of sideband equipment approved by the Radio Branch of the P.W.C. Department. In a letter dated April 1967, the Department indicates that they are prepared to accept, as meeting the 100 watt p.e.p. power output limitation, the Yaesu Muse equipment, type FT-30 and FT-110, as meeting these requirements.

NEW ARRANGEMENTS FOR QSLs TO VK

Due to the heavy and steadily increasing workload at the W.I.A. Federal QSL Bureau, 23 Landale St., Box Hill, E.I.I. Vic., it has become necessary to re-organise the W.I.A. Inwards QSL Bureau.

Commencing immediately, the Federal QSL Bureau can handle cards ONLY for VKs, VKs, VKs and unlisted stations.

Cards for all other districts should be sent DIRECT to the Divisional Bureaux listed below.

VK1 and VK2s
VK1 and VK2 QSL Bureaux, W.I.A.
Box 1734, G.P.O., Sydney, New South Wales.

VK3
VK3 Inwards QSL Bureau, C/o Mr. E. Trebbleck, 340 Gilles St., Thornbury, V.I. 17, Victoria.

VK4
VK4 QSL Bureau, Mr. J. Files, VK4JF, 10 Lands St., Buranda, South Brisbane, Queensland.

VK5
VK5 QSL Bureau, Mr. Geo. Luxen, VK5J, 7 Belair Rd., Torrens Park, South Australia.

VK6
VK6 QSL Bureau, Mr. J. Bumble, VK6RU, Box 7219, G.P.O., Perth, Western Australia.

VK7
VK7 QSL Bureau, Mr. J. Batchelor, VK7JB, 35 Willows Ave., Lower Sandy Bay, Tasmania.

VK8, VK9, VK10
W.I.A. Federal QSL Bureau, 23 Landale St., Box Hill, E.I.I. Victoria.

FEDERAL QSL BUREAU

The background to current changes in the Australian QSL Bureau organisation may prove of interest. During the past nine months, handling of cards through the Federal Bureau have trebled and many months have been four times the total of any previous corresponding month. This huge increase in the workload has, in my opinion, been brought about by a number of factors: (1) The tremendous growth of s.b. operation; (2) the availability of commercial equipment; (3) the steady increase in the Ham population all over the world; (4) the rapid improvement in DX conditions on all bands; (5) the greater use of outward bureaus for the despatch of QSLs.

In the past six months the handling of the load at this Bureau has increased from 12 to 18 hours of labour weekly, to do the job as it should be done, even with assistance freely given by Dave Jenkins, VK3ABR, which is gratefully acknowledged. However, during all this time Bureau duties has upset domestic obligations and restricted social interaction and made inroads into the time available for radio activity.

The receipt in one month of five consignments of cards—three from Japan and one each from Korea, the United States, and the United Kingdom—containing 7,500 cards in all, brought the situation to a head, and as a result I asked the Federal Executive to relieve me of the job. This was discussed at the recent Easter Convention in Hobart.

After further thought on the subject, it was apparent that whoever took over the job, no matter who he was, the same labour would be involved and would probably result in many changes of managers and bureaus and confusion, which would become confusing to Overseas Bureaux.

Therefore I suggested to Federal Executive that they implement now a scheme that must inevitably have been introduced in the early future. That is that all Overseas Bureaux be

directed to mail direct to each Division (VK2 to 7 inclusive) and that the Federal Bureau handle only VKs, VKs and VKs, and also unlisted VK stations. The A.R.R.L. were forced to implement a similar plan many years ago and indeed have recently further divided one of their districts.

VK Divisional Inward Managers will not be involved in any extra work, merely receiving the cards direct from overseas instead of through the Federal Bureau.

The scheme, which should be fully operative after the expiration of twelve months, should result in faster receipt of cards, save work and circumlocution and also reduce postage bills.

The Radio Society of Ceylon draws attention to their Worked Ten Ceylon Award. Full details from this Bureau.

The Windsor, Ontario, Canada Centennial Committee, in conjunction with the Windsor Amateur Radio Club, announces a "Windsor Centennial Award" during the year 1967. Contacts with five club members earns a certificate and each month a draw from certificate winners decides the recipient of a silver medal, and a letter dated the winner of a set of coins (including a 20 dollar gold coin). Full details from this Bureau.

EHKBC adviser of the annual DX-pedition of Region 4 of the I.R.T.U. This year they plan operation from Bere Island off the s.w. coast of Eire, from 1900, June 2, to 1900, June 8. They will use all bands from 160 metres to 14 Mc. inclusive and all modes. The call sign will be EI0BL. A special QSL card for contacts will be issued by EI0BL.

The new address of the DLA/D4 QSL Bureau is: M.A.R.S. Radio Station, Horn Signal Battalion, A.P.O. New York 0917, U.S.A.

Tubby Vay, VK8NO, reporting in from Edo Tracking Station, Gye Arrehon Land, where he is signing VK8NO. Present gear is an FL800B and a local version of RA17. He is waiting for his home rig to be completed and says the area is fine for DX and also fishing. Reports that son, Jeff VK8ZP, was married last February.

—Ray Jones, VK8RJ, Manager.

FEDERAL AWARDS

DEPARTMENT OF AMATEUR RADIO CLUB ISSUES "WORKED ALL EUROPE" AWARD

It is stated in the rules "as a recognition for the close co-operation of the European short-wave Amateurs and especially as an expression of a sincere relationship between the Amateurs of the world, the D.A.R.C. grants the W.A.E. award for outstanding operational performance in three different classes: W.A.E. 3, W.A.E. 2 and W.A.E. 1."

The W.A.E. countries list comprises 60 countries, territories and islands in and around Europe. All Amateur bands may be used and each contact with the different listings on each band counts one point (3.5 Mc. contacts from VK count two points).

W.A.E. 3 is for 160 p.m., min. 40 countries.
W.A.E. 2 " 160 " " 50 "
W.A.E. 1 " 175 " " 50 "

D.A.R.C. advises that the new Awards Manager is Walter Geyhrlicher, DL8RK, 8850 Kaulbeuren, Box 252, Germany.

In furnishing the above information, D.A.R.C. "congratulates" Ray Baxter, for being the first Amateur in Oceania to obtain W.A.E. 1 (c.w.) and W.A.E. 3 (phone) too." VK3ABR, Bill Hempel, holds W.A.E. 3 (2 s.b.s.) certificate No. 6.

Detailed rules and application form may be obtained from W.A.E. Award Manager, DL8RK.

SILENT KEY

It is with deep regret that we record the passing of:

VK2ARA - W. Short,
VK2BDF - D. Freemantle
VK3JBY - Otto Holt,
VK5JO - J. E. McAllister.

NEW SOUTH WALES

OFFICE-BEARERS FOR 1967

Following the election of Councillors and the Council meeting held on 7th April, the office-bearers for VK1 Division for 1967 are as follows:

President: K. Finney, VK8KJ.
Vice Presidents: W. Lewis, VK3YB; C. Whittins, VK3ALH.
Treasurer: Mrs. Gwynne (until June).
Secretary: Not filled.
Legal Officer: W. Clark, Assoc.
Registrar: W. Johnston, Assoc.
Education Officer: H. Burritt, VK3AAH.
Class Supervisor: C. Bardwell, VK3IR.
QSL Manager: T. Whiting, VK3ACD.
Publications Officer: VK3QZ.
Bulletin Co-Editors: W. Johnston, Assoc.; O. Sabin, VK3AGS.
Morse Supervisor Tape Service: E. Hodgkins, VK3EH.
Morse Supervisor Practice Sessions: D. Courtney, VK3AUC.
Librarian: K. de Haan, VK3UE; P. Tavaris, VK3ATA.
Engineer-in-Charge: D. Duff, VK3EO.
District Grounds: L. Cartwright, VK3JZC.
Y.R.S. Council Liaison Officer: D. Jeans, VK3BSJ (Councilor).
Zones Liaison Officer: C. Henderson, VK3CH (Councilor).
W.I.C.E.N. Co-ordinator: V. Cole, VK3TV.
Communications Officer: W. Lewis, VK3YB (Councilor).
Divisional "A.R." Correspondent: S. Dogger, VK3ZRD (Councilor).

An additional number of positions and appointments are to be determined by Council and these will appear next month.

MEMBERSHIP DRIVE FOR N.S.W.

The new VK1 President, K. Finney, had barely had time to warm up to the hot seat when he announced that the Division was going to launch a solid membership drive. All Amateurs are reminded that the Division can progress to greater achievements by having new blood in the ranks, in the form of more new members. Plainly, the writer feels that the figures of membership are a disgrace in VK3, so how about it you guys? The slogan, old as it is, is good for this drive: "Every member at his post, the necessary communication will be written here, just see that your mates are with the "in people" in the W.I.A."

ZONE LIAISON OFFICER

Council has established a new position of one councillor being a Zone Liaison Officer. The idea is to provide the necessary communication between the country Amateur via his Zone Officer to Council.

LIBRARY

The Librarian advises that a good supply of books and magazines are always available, country members are able to secure loans as well as visitors to W.I.C. Contact the Librarian for details at W.I.C.

Y.R.S. LIAISON OFFICER, N.S.W.

Councillor Dave Jeans has been appointed as Y.R.S. Liaison Officer in N.S.W. Following the departure of the Federal Co-ordinator, Rex Higgs, VK3YB, for an overseas holiday, it was discovered that Y.R.S. activity was on a decline in N.S.W. and as the W.I.A. has put a great deal of effort into Y.R.S. it was decided to assist the Y.R.S. in N.S.W. by giving them a spokesman on Council.

DURAL TRANSMITTING STATION

Country and city members alike will be pleased to learn that the equipment at Dural will be added to in the next few months, as well as the station being brought up to standard. Full details were not available at the time of writing, but your correspondent understands that the V.H.F. and a.m. equipment is to be overhauled to bring it up to standard. It is also known that the W.I.C.E.N. group plan to install a 53950 Mc. base at Dural to supplement the existing 53950 Mc. base equipment. Plans for the h.f. equipment are not yet formulated, but it is hoped that the R3810 5 Mc. transmitter can be replaced shortly as this unit worries the operators.

somewhat and has had several failures which have interrupted the Sunday morning broadcasts.

"SOUTH EAST ASIA NET" AWARD

CERTIFICATES

Mrs. Hebe Grouse, VK4AOK, advises that she has been appointed the custodian for the "South East Asia Net Award" certificate. Hebe is taking over from the previous custodian who was SV1MT, Harry Pain, who is returning to G. L. James. The next meeting is on 14.30.30 Mc. at 1200 G.M.T. The attractive certificate is awarded to any Amateur who works 12 south east Asia net members outside the net time.

NEPAN FIELD DAY

Members are advised that the Nepan District Amateur Radio Club will not be holding their usual field day until the spring this year.

VISITORS TO SYDNEY

During mid April Amateurs in Sydney were privileged to meet well known Alaskan Amateur, Nancy Lee Dittman, K1JPCQ, and her family. K1JPCQ is very well known in Alaska together with her mother, K1JTWK, as the organizers of the Bush Amateur Radio Training in that country.

After some nine years in Alaska the Dittmans decided to migrate to Australia and in so doing were on their way to Launceston, Tasmania, when they passed through Sydney.

APRIL MONTHLY MEETING AT W.I.C.

The April general meeting was held at Wireless Institute Centre on 28th April with an attendance of some 60 members. Visitors included Eddie V.W. George, K1JPCQ, and her family. K1JPCQ is very well known in Alaska together with her mother, K1JTWK, as the organizers of the Bush Amateur Radio Training in that country.

The Education Officer, Harold VK4AAH, said that some 18 lecture tapes were in circulation and that he had only seven left. Harold went on to say that lecture tapes are readily available for the return postage charge and that many subjects are covered, so members who miss lectures or find lectures hard to hear should obtain the lecture on tape. In conclusion, Harold said that the lecture subjects were carefully selected and members should not hesitate to contact him on these points.

Reporting on W.I.C.N. activity, Vic VK3VL said that h.f. members were well represented in the Sydney area and 33 Mc. units were used in the Blue Mountains and Illawarra areas. Vic went on to say that h.f. was going to be used in the future. He said that this was partly set up in the form of call backs to VK3WL at Dural after the Sunday Broadcast. Vic said that it was not necessary to have a mobile unit to take part in W.I.C.N. activities and exercises as there was always a need for assistance at Dural to man the base station and do the necessary paper work during an exercise, an example of this being shown in the recent article in "A.R." on the VK4R emergency.

The lecture for the evening was given by Bruce Ridley of the D.C.A. Laboratory staff and was on Transistors in R.F. Service. Bruce covered the use of transistors in R.F. amplifiers, in the various configurations discussing the problems and advantages of the various circuits which can be used. He also discussed the use of transistors were shown and commented on. The vote of thanks was moved by Dave VK3EEO who said that the lecture was appreciated and the usual round of applause followed.

The June lecture will be "R.F. All About It" and by Ray VK3V, who is an engineer with D.C.A. It is believed to be a good lecture on a subject of which little is known in VK3 but of which many are very interested.

CONTEST CALENDAR

- 6th/9th July: N.Z. A.R.T. Memorial Contest (3.5 Mc.)
- 8th/9th July: R.S.G.B. 1.8 Mc. "Summer" Contest.
- 18th/19th August: Remembrance Day Contest.
- 12th/13th October: 12th W.A.E. DX Contest (c.w. section).
- 9th/18th Sept.: 13th W.A.E. DX Contest (phone section).
- 7th/8th October: VK-ZL-Oceania DX Contest (phone section).
- 14th/15th October: VK-ZL-Oceania DX Contest (c.w. section).
- 14th/15th October: R.S.G.B. 21/28 Mc. Telephone Contest.
- 28th/29th October: R.S.G.B. 7 Mc. DX Contest (phone section).

The meeting closed at 10.30 p.m. just after the meeting closed and announced that the contest was to be given to starting the meetings at 5 p.m. as in the case in similar organisations, so no doubt we will hear more of this later.

73, de Stan VK3ZRD

HUNTER BRANCH

So you want to go sideband. Well if you missed the April lecture you missed your chance to find out the real art of sideband at bargain rates. Jan 221P snared

OBITUARY

BEAL SHOOT, VK4ABA

Bill hailed from the Grafton district and during World War II was employed at an aircraft factory at Auburn. After the war he was employed at Telephone and Electrical Industries Ltd. He had a home at Beacon Hill on the north side of Sydney, until his retirement when he and his wife built a home in the Clarence River district. Bill had only recently become active from this QTH when he suffered a fatal heart attack on 2nd June who visited W.I.C. on bulletin board days and assisted with remember Bill as a very willing worker for the W.I.A. in many projects. John and Althea Bill.

Deepest sympathy is extended to his many friends on his sad loss.

DAVE FREEMANTLE, VK3BDF

Dave commenced radio construction at the then early age of 13 in India where he lived, and took up a career in communications with the Indian Railways. Dave first became active in mid 30s as VJUCR, operating from all parts of India. The advent of World War II saw Dave join the British Indian Army, gaining a commission, and eventually retiring after full service with the rank of Lt. Colonel. Following his discharge he came to Australia in 1966 and was employed in the military electronics field.

Dave had only recently taken out the call VK3BDF when he suffered a fatal heart attack on the morning of his sudden death.

His many friends extend their deepest sympathy in this sad loss.

OTTO HOLST, VK3BY

Members of the W.I.A. will be sorry to hear of the passing of an old timer, Otto Holst, who died on 31st March, 1967, aged 50 years.

He joined the W.I.A. in 1954 and Otto shared the Call Sign VK3BY during back to the original issue of the VK signs, just after the 1947/48 war.

For about ten years prior to the second war, VK3BY was well known to Melbourne listeners for its broadcast of music on 558 metres late at night and on each Sunday.

Hector and Otto designed and built a six transmitter for the Melbourne Herald station 3DR.

For 36 years up to his death, Otto supplied and operated a public address system in the Melbourne area.

The VK3BY mast, 185 feet of Douglas Fir, erected about 1930, still stands as good as ever, at 87 Bland Street.

W.I.A. members extend their deepest sympathy to the family of Otto.

JOSEPH EDWARD MCALLISTER, VK4JO

The VK3 Division, with sincere regret, announces the passing of Joe McAllister, VK4JO, who died on Saturday, April 29, 1967, aged 60 years.

An ex-councillor of his Division, and one of the few Life Members, Joe has been a hard worker in the interests of both his club and the Division, and during the years when the social activities in VK3 were greater than now, Joe could always be found enthusiastically engaged in all of the jobs usually avoided where possible by other Council members.

He was mainly responsible for the formation of the Brown Mountain Club, and steered that venture through many successful years. Active on the air until just recently and well known throughout VK3, he will be missed by many and to his sorrowing wife, Nellie, and the members of his family we extend the deepest sympathy. His sudden loss, and can only hope that the hand of time will help to ease the shock of his passing.

everyone with his new all-transistor transmitter, and which he displayed at the meeting. This all unit transmitter was designed and built by Ian is quite small by usual transceiver standards. In fact it is only about one third the size of the average transceiver. What about amazing me by sending an article on the thing. Ed. I demonstrated it goes on providing a very good signal. The reason Ian says is the use of a meg filter (recently released) which does away with the need for L's. To go on and detail all the new ideas and bright ideas the design team would occupy more space than the column allows but, suffice to say, it is a revelation in design and construction. The transceiver. Amateurs are still able to roll their own—this case convincingly better than the professional.

There was a firm about expired air circulation also at the April meeting. It is always the obvious things that escape our notice, so the message in this film was an important one and worthy of the attention of all. Electric shock is a very real danger to all of us and this film showed very graphically what can and should be done in an emergency. The film shown is the first of a series of colour documentaries, mostly concerning electronics, and the future of the future. Branch meetings. It is proposed that the next meeting should start promptly at 8 so if you are interested, please be early.

Branch has made a bulk purchase of some 2500s type and these are available to members at an attractive price. Tony VK3ZET is looking after the distribution and, if he has any left over, will be available at the meeting. Tony, aforementioned, has already a good use of the same devices in a transmitter for 3 metres. Using five transistors, the output is 100 watts. It will be a pleasure to have a forthcoming lecture at our meeting. Here is another example of Amateur ingenuity—this time in the form of a circuit diagram for publication in "A.R."—Ed.

The Monday night broadcasts are now on a roster basis and it is aimed to have this series of transmissions as varied as possible. Already, many have volunteered for a turn on the programme and it should be possible to maintain continuous Monday night broadcasts. If you are interested, you would like to have an opportunity to take part and your name is not on the roster, please contact Frank VK3ZF who will place your name on the list.

Back on the air after a long absence is Leo ZQ8, heard calling in to 2WI a Sunday or so back.

With the possible issue of some more carphones, the 146 meg. net looks as if it is now well established. Bill 2ZWM seems to have sorted out his problems and even John 2ZJC is back on the air. It will be a pleasure to see him at the meeting. There is a plan to relay broadcasts on Sunday mornings and Monday nights on 146.8. Preliminary tests were made on 146.8. Bolton Point and Terahs are good originating points for fm. You'll stand a better chance of hearing the signal with the Terahs than with the Bolton Point. However, Bill 2ZWM, and a modification of the crystal set mentioned earlier, John to make an excursion to Wollombi and all points thereabouts. I'm not sure of the date for this, but a listen around whif will soon put you right.

Surprise of the month came when a familiar voice was heard on the 28Mc. band, on the other night. So that's where he went! And again from overseas, Jim 3AHT is keeping in touch with the 28Mc. band. I'm not sure if he heard he was in Panama. Key 2ZWK is still making the headlines with the Club at Maitland. Apparently he has some very slight problems with the 28Mc. band. I'm not sure of the date for this, but a listen around whif will soon put you right.

The coming short wave season will be a real treat. Y.M.C.A. of very shortly.

I hope that the July meeting has not escaped your notice. Our well known Secretary will be the chief attraction. The 28Mc. band. Gordon will be discussing how to make Command receivers really go. He has all sorts of bright ideas to make them perform as their makers never intended. So, please, and rewarded if you come to room 8 in the Clegg Building of the Newcastle Technical College, on July 21st. And there'll be a film too. See you, 73, 2AIX.

CENTRAL COAST

The general meeting of the Central Coast Branch was held on Friday, 21st April. The suggestion of a club field day was discussed Sunday, 4th June, being the tentative date set for the lecture was given by Tony 2ZCT on his



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★ PERSPEX SHEET

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Approximate frequency, 200 Mc. Contains 46 miniature tubes, \$30.

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MR2-P. Size 1¾" square:—

0-500 microamps. \$3.25
0-1 milliamp. \$3.10
0-300 volts a.c. \$3.10

P25. Size 2½" square, 0-1 milliamp. \$5.00

CR3-P. Size 3" x 3¼", 0-300 volts a.c. \$4.85

P60. Size 6" x 4¼", 0-1 milliamp. \$8.60

MOVING IRON A.C. AND D.C. METERS

Size 1½" square:—

0-1, 5, 10, 20 amps.;
0-10, 20, 40, 50 volts.

\$3.50 POST FREE.

IMPORTED ROSENTHAL HIGH STABILITY RESISTORS

1 WATT RATING

- 15 ohms to 8.2 megohms $\pm 1\%$.
- 11 megohms to 30 megohms $\pm 2\%$.

18c each Plus S.T. 12½%.

Write or call for lists of sizes available.

TRANSISTOR TRANSFORMERS

ROLA TYPE LDR43

4300 ohms to 600 ohms c.t.
25c plus S.T. 25%.
Pack and Post 5c.

CHOKES

A & R TYPE 3052

1 Henry at 80 mA. D.c. resistance 30 ohms.
25c plus S.T. 25%.
Pack and Post 10c.

807 VALVES

AMERICAN SYLVANIA

\$1.75 each or **\$18** dozen.
Inc. tax and post.

AUDIO AMPLIFIER MODULES

Four-Transistor: 1w. output.
High Impedance input: 100K ohms.

Low Impedance input: 1K ohms.

Output Impedance: 4, 8 or 16 ohms.

Power source: 6 volts.

Gain: 70 db.

Size of board: 4½" x 2" approx.

Supplied with circuit and wiring instructions.

\$7.50 plus S.T. 12½%.
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